
APPENDIX A
40 CFR PART 230*

*Reprinted from *Federal Register*,
Vol. 45, No. 249, Wednesday, December 24, 1980, pp. 85336

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 230

Guidelines for Specification of Disposal Sites for Dredged or Fill Material

[WH-FRL 1647-7]

45 FR 85336

December 24, 1980

AGENCY: Environmental Protection Agency.

ACTION: Rule.

SUMMARY: The 404(b)(1) Guidelines are the substantive criteria used in evaluating discharges of dredged or fill material under section 404 of the Clean Water Act. These Guidelines revise and clarify the September 5, 1975 Interim final Guidelines regarding discharge of dredged or fill material into waters of the United States in order to:

- (1) Reflect the 1977 Amendments of Section 404 of the Clean Water Act (CWA);
- (2) Correct inadequacies in the interim final Guidelines by filling gaps in explanations of unacceptable adverse impacts on aquatic ecosystems and by requiring documentation of compliance with the Guidelines; and
- (3) Produce a final rulemaking document.

EFFECTIVE DATE: These Guidelines will apply to all 404 permit decisions made after March 23, 1981. In the case of civil works projects of the United States Army Corps of Engineers involving the discharge of dredged or fill material for which there is no permit application or permit as such, these Guidelines will apply to all projects on which construction or dredging contracts are issued, or on which dredging is initiated for Corps operations not performed under contract, after October 1, 1981. In the case of Federal construction projects meeting the criteria in section 404(r), these Guidelines will apply to all projects for which a final environmental impact statement is filed with EPA after April 1, 1981.

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SUPPLEMENTARY INFORMATION:

Background

The section 404 program for the evaluation of permits for the discharge of dredged or fill material was originally enacted as part of the Federal Water Pollution Control Amendments of 1972. The section authorized the Secretary of the Army acting through the Chief of Engineers to issue permits specifying disposal sites in accordance with the section 404(b)(1) Guidelines. Section 404(b)(2) allowed the

Secretary to issue permits otherwise prohibited by the Guidelines, based on consideration of the economics of anchorage and navigation. Section 404(c) authorized the Administrator of the Environmental Protection Agency to prohibit or withdraw the specification of a site, upon a determination that use of the site would have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

Under section 404(b)(1), the Guidelines are to be based on criteria comparable to those in section 403(c) of the Act, for the territorial seas, contiguous zone, and oceans. Unlike 403(c), 404 applies to all waters of the United States. Characteristics of waters of the United States vary greatly, both from region to region and within a region. There is a wide range of size, flow, substrate, water quality, and use. In addition, the materials to be discharged, the methods of discharge, and the activities associated with the discharge also vary widely. These and other variations make it unrealistic at this time to arrive at numerical criteria or standards for toxic or hazardous substances to be applied on a nationwide basis. The susceptibility of the aquatic ecosystem to degradation by purely physical placement of dredged or fill material further complicates the problem of arriving at nationwide standards. As a result, the Guidelines concentrate on specifying the tools to be used in evaluating and testing the impact of dredged or fill material discharges on waters of the United States rather than on simply listing numerical pass-fail points.

The first section 404(b)(1) Guidelines were promulgated by the Administrator in interim final form on September 5, 1975, after consultation with the Corps of Engineers. Since promulgation of the interim final Guidelines, the Act has been substantially amended. The Clean Water Act of 1977 established a procedure for transferring certain permitting authorities to the states, exempted certain discharges from any section 404 permit requirements, and gave the Corps enforcement authority. These amendments also increased the importance of the section 404(b)(1) Guidelines, since some of the exemptions are based on alternative ways of applying the Guidelines. These changes, plus the experience of EPA and the Corps in working with the interim final Guidelines, have prompted a revision of the Guidelines. The proposed revision attempted to reorganize the Guidelines, to make it clearer what had to be considered in evaluating a discharge and what weight should be given to such considerations. The proposed revision also tightened up the requirements for the permitting authority's documentation of the application of the Guidelines.

After extensive consultation with the Corps, the proposed revisions were put out for public comment (44 FR 54222, September 18, 1979). EPA has reviewed, and, after additional consultation with the Corps, revised the proposal in light of these comments. This preamble addresses the significant comments received, explains the changes made in the regulation, and attempts to clear up some misunderstandings which were revealed by the comments. Response to Significant Comments

Regulation Versus Guideline

A number of commenters objected to the proposed Guidelines on the grounds that they were too "regulatory." These commenters argued that the term "guidelines" which appears in section 404(b)(1) requires a document with less binding effect than a regulation. EPA disagrees. The Clean Water Act does not use the word "guideline" to distinguish advisory information from regulatory requirements. Section 404(b)(2) clearly demonstrates that Congress contemplated that discharges could be "prohibited" by the Guidelines. Section 403 (which is a model for the 404 (b)(1) Guidelines) also provides for "guidelines" which are clearly regulatory in nature. Consequently, we have not changed the regulation to make it simply advisory. Of course, as the regulation itself makes clear, a certain amount of flexibility is still intended. For example, while the ultimate conditions of compliance are "regulatory", the Guidelines allow some room for judgment in determining what must be done to

arrive at a conclusion that those conditions have or have not been met. See, for example, @ 230.6 and Sec. 230.60, and introductory sentence in Sec. 230.10.

Statutory Scheme and How the Guidelines Fit Into It

A number of commenters with objections appeared confused about EPA's role in the section 404 program. Some wondered why EPA was issuing Guidelines since EPA could stop an unacceptable discharge under section 404(c). Others were uncertain how the Guidelines related to other section 404 regulations.

The Clean Water Act prohibits the discharge of dredged or fill material except in compliance with section 404. Section 404 sets up a procedure for issuing permits specifying discharge sites. Certain discharges (e.g. emergency repairs, certain farm and forest roads, and other discharges identified in sections 404(f) and (r)) are exempted from the permit requirements. The permitting authority (either the Corps of Engineers or an approved State program) approves discharges at particular sites through application of the section 404(b)(1) Guidelines, which are the substantive criteria for dredged and fill material discharges under the Clean Water Act. The Corps also conducts a Public Interest Review, which ensures that the discharge will comply with the applicable requirements of other statutes and be in the public interest. The Corps or the State, as the case may be, must provide an opportunity for a public hearing before making its decision whether to approve or deny. If the Corps concludes that the discharge does not comply with the Guidelines, it may still issue the permit under 404(b)(2) if it concludes that the economics of navigation and anchorage warrant. Section 404(b)(2) gives the Secretary a limited authority to issue permits prohibited by the Guidelines; it does not, as some commenters suggested, require the Guidelines to consider the economics of navigation and anchorage. Conversely, because of 404(b)(2), the fact that a discharge of dredged material does not comply with the Guidelines does not mean that it can never be permitted. The Act recognizes the concerns of ports in section 404(b)(2), not 404(b)(1). Many readers apparently misunderstood this point.

EPA's role under section 404 is several-fold. First, EPA has the responsibility for developing the 404(b)(1) Guidelines in conjunction with the Corps. Second, EPA reviews permit applications and gives its comments (if any) to the permitting authority. The Corps may issue a permit even if EPA comments adversely, after consultation takes place. In the case of state programs, the State director may not issue a permit over EPA's unresolved objection. Third, EPA has the responsibility for approving and overseeing State 404 programs. In addition, EPA has enforcement responsibilities under section 309. Finally, under either the Federal or State program, the Administrator may also prohibit the specification of a discharge site, or restrict its use, by following the procedures set out in section 404(c), if he determines that discharge would have an unacceptable adverse effect on fish and shellfish areas (including spawning and breeding areas), municipal water supplies, wildlife or recreation areas. He may do so in advance of a planned discharge or while a permit application is being evaluated or even, in unusual circumstances, after issuance of a permit. (See preamble to 40 CFR Part 231, 44 FR 58076, October 9, 1979.) If the Administrator uses 404(c), he may block the issuance of a permit by the Corps or a State 404 program. Where the Administrator has exercised his section 404(c) authority to prohibit, withhold, or restrict the specification of a site for disposal, his action may not be overridden under section 404(b)(2). The fact that EPA has 404(c) authority does not lessen EPA's responsibility for developing the 404(b)(1) Guidelines for use by the permitting authority. Indeed, if the Guidelines are properly applied, EPA will rarely have to use its 404(c) veto.

The Clean Water Act provides for several uses of the Guidelines in addition to the individual permit application review process described above. For example, the Corps or an approved state may issue General permits for a category of similar activities where it determines, on the basis of the 404(b)(1) Guidelines, that the activities will cause only minimal adverse environmental effects both individually

and cumulatively (Section 404(e) and (g)(1)). In addition, some of the exemptions from the permit requirements involve application of the Guidelines. Section 404(r) exempts discharges associated with Federal construction projects where, among other things, there is an Environmental Impact Statement which considers the 404(b)(1) Guidelines. Section 404(f)(1)(F) exempts discharges covered by best management practices (BMP's) approved under section 208(b)(4)(B) and (c), the approval of which is based in part on consistency with the 404(b)(1) Guidelines.

Several commenters asked for a statement on the applicability of the Guidelines to enforcement procedures. Under sections 309, 404(h)(1)(G), and 404(s), EPA, approved States, and the Corps all play a role in enforcing the section 404 permit requirements. Enforcement actions are appropriate when someone is discharging dredged or fill material without a required permit, or violates the terms and conditions of a permit. The Guidelines as such are generally irrelevant to a determination of either kind of violation, although they may represent the basis for particular permit conditions which are violated. Under the Corps' procedural regulations, the Corps may accept an application for an after-the-fact permit, in lieu of immediately commencing an enforcement action. Such after-the-fact permits may be issued only if they comply with the 404(b)(1) Guidelines as well as other requirements set out in the Corps' regulations. Criteria and procedures for exercising the various enforcement options are outside the scope of the section 404(b)(1) Guidelines.

Some commenters suggested that we either include specific permit processing procedures or that we cross-reference regulations containing them. Such procedures are described in 33 CFR Part 320-327 (Corps' procedures) and in 40 CFR Part 122-124 (minimum State procedures). When specific State 404 programs are approved, their regulations should also be consulted.

How Future Changes in the Testing Provision Relate to Promulgation of This Final Rule

The September 18, 1979, proposal contained testing provisions which were essentially the same as those in the Interim Final regulations. The Preamble to that proposal explained that it was our intention to propose changes in the testing provisions, but that a proposal was not yet ready. Consequently, while we have been revising the rest of the Guidelines, we have also been working on a proposal for reorganizing and updating the testing provisions. Now that we have finalized the rest of the Guidelines, two options are available to us. First, we could delay issuing any final revisions to our 1979 proposal until we could propose a revised testing package, consider comments on it, and finalize the testing provisions. We could then put together the Guidelines and the revised testing section in one final regulation. The 1975 interim final Guidelines would apply in their entirety until then. Second, we could publish the final Guidelines (with the 1975 testing provisions) and simultaneously propose changes to the testing provision. It is our present belief that proposed changes to the testing provision would not affect the rest of the Guidelines, but the public would be allowed to comment on any inconsistencies it saw between the rest of the Guidelines and the testing proposal. Then, when the comments to the testing proposal had been considered, we would issue a new final regulation incorporating both the previously promulgated final Guidelines and the final revised testing provision.

We have selected the second option because this approach ensures that needed improvements to the Guidelines are made effective at the earliest possible date, it gives the public ample opportunity to comment on the revised testing section, and it maintains the 1975 testing requirements in effect during the interim which would be the case in any event.

Guideline Organization

Many readers objected to the length and complexity of the Guidelines. We have substantially reorganized the regulation to eliminate duplicative material and to provide a more logical sequence.

These changes should make it easier for applicants to understand the criteria and for State and Corps permit evaluators and the Administrator to apply the criteria. Throughout the document, we have also made numerous minor language changes to improve the clarity of the regulations, often at the suggestion of commenters.

Following general introductory material and the actual compliance requirements, the regulations are now organized to more closely follow the steps the permitting authority will take in arriving at his ultimate decision on compliance with the Guidelines.

By reorganizing the Guidelines in this fashion, we were also able to identify and eliminate duplicative material. For example, the proposed Guidelines listed ways to minimize impacts in many separate sections. Since there was substantial overlap in the specific methods suggested in those sections, we consolidated them into new Subpart H. Other individual sections have been made more concise. In addition, we have decreased the number of comments, moving them to the Preamble or making them part of the Regulation, as appropriate.

General Permits

When issued after proper consideration of the Guidelines, General permits are a useful tool in protecting the environment with a minimum of red tape and delay. We expect that their use will expand in the future.

Some commenters were confused about how General permits work. A General permit will be issued only after the permitting authority has applied the Guidelines to the class of discharges to be covered by the permit. Therefore, there is no need to repeat the process at the time a particular discharge covered by the permit takes place. Of course, under both the Corps' regulations and EPA's regulations for State programs, the permitting authority may suspend General permits or require individual permits where environmental concerns make it appropriate. For example, cumulative impacts may turn out to be more serious than predicted. This regulation is not intended to establish the procedures for issuance of General permits. That is the responsibility of the permitting authority in accordance with the requirements of section 404.

Burden of Proof

A number of commenters objected to the presumption in the regulations in general, and in proposed Sec. 230.1(c) in particular, that dredged or fill material should not be discharged unless it is demonstrated that the planned discharge meets the Guidelines. These commenters thought that it was unfair and inconsistent with section 404(c) of the Act.

We disagree with these objections, and have retained the presumption against discharge and the existing burden of proof. However, the section has been rewritten for clarity.

The Clean Water Act itself declares a national goal to be the elimination of the discharge of pollutants into the navigable waters (section 101(a)(1)). This goal is implemented by section 301, which states that such discharges are unlawful except in compliance with, *inter alia*, section 404. Section 404 in turn authorizes the permitting authority to allow discharges of dredged or fill material if they comply with the 404(b)(1) Guidelines. The statutory scheme makes it clear that discharges shall not take place until they have been found acceptable. Of course, this finding may be made through the General permit process and the statutory exemptions as well as through individual permits.

The commenters who argued that section 404(c) shifts the usual burden to the EPA Administrator misunderstood the relationship between section 404(c) and the permitting process. The Administrator's authority to prohibit or restrict a site under section 404(c) operates independently of the Secretary of the Army's permitting authority in 404(a). The Administrator may use 404(c) whether or not a permit application is pending. Conversely, the Secretary may deny a permit on the basis of the Guidelines, whether or not EPA initiates a 404(c) proceeding. If the Administrator uses his 404(c) "veto," then he does have the burden to justify his action, but that burden does not come into play until he begins a 404(c) proceeding (See 40 CFR Part 231).

Toxic Pollutants

Many commenters objected strenuously to the presumptions in the Guidelines that toxic pollutants on the section 307(a)(1) list are present in the aquatic environment unless demonstrated not to be, and that such pollutants are biologically available unless demonstrated otherwise. These commenters argued that rebutting these presumptions could involve individual testing for dozens of substances every time a discharge is proposed, imposing an onerous task.

The proposed regulation attempted to avoid unnecessary testing by providing that when the Sec. 230.22(b) "reason to believe" process indicated that toxics were not present in the discharge material, no testing was required. On the other hand, contaminants other than toxics required testing if that same "reason to believe" process indicated they might be present in the discharge material. This is in fact a distinction without a difference. In practical application, toxic and non-toxic contaminants are treated the same; if either may be there, tests are performed to get the information for the determinations; if it is believed they are not present, no testing is done. Because the additional presumption for toxics did not actually serve a purpose, and because it was a possible source of confusion, we have eliminated it, and now treat "toxics" and other contaminants alike, under the "reason to believe test" (Sec. 230.60). We have provided in Sec. 230.3 a definition of "contaminants" which encompasses the 307(a)(1) toxics.

Water Dependency

One of the provisions in the proposed Guidelines which received the most objections was the so-called "water dependency test" in the proposed Sec. 230.10(e). This provision imposed an additional requirement on fills in wetlands associated with non-water dependent activities, namely a showing that the activity was "necessary." Many environmentalists objected to what they saw as a substantial weakening of the 1975 version of the water dependency test. Industry and development-oriented groups, on the other hand, objected to the "necessary" requirement because it was too subjective, and to the provision as a whole to the extent that it seemed designed to block discharges in wetlands automatically.

We have reviewed the water dependency test, its original purpose, and its relationship to the rest of the Guidelines in light of these comments. The original purpose, which many commenters commended, was to recognize the special values of wetlands and to avoid their unnecessary destruction, particularly when practicable alternatives were available in non-aquatic areas to achieve the basic purposes of the proposal. We still support this goal, but we have changed the water-dependency test to better achieve it.

First, we agree with the comments from both sides that the "necessary" test imposed by the 1979 proposal is not likely to be workable in practice, and may spawn more disputes than it settles. However, if the "necessary" test is simply deleted, section 230.10(e) does not provide any special recognition of or protection for wetlands, and thus defeats its purpose. Furthermore, even if the

"necessary" test were retained, the provision applies only to discharges of fill material, not discharges of dredged material, a distinction which lessens the effectiveness of the provision. Thus, we have decided, in accordance with the comments, that the proposal is unsatisfactory.

We have therefore decided to focus on, round out, and strengthen the approach of the so-called "water dependency" provision of the 1975 regulation. We have rejected the suggestion that we simply go back to the 1975 language, in part because it would not mesh easily with the revised general provisions of the Guidelines. Instead, our revised "water dependency" provision creates a presumption that there are practicable alternatives to "non-water dependent" discharges proposed for special aquatic sites. "Non-water dependent" discharges are those associated with activities which do not require access or proximity to or siting within the special aquatic site to fulfill their basic purpose. An example is a fill to create a restaurant site, since restaurants do not need to be in wetlands to fulfill their basic purpose of feeding people. In the case of such activities, it is reasonable to assume there will generally be a practicable site available upland or in a less vulnerable part of the aquatic ecosystem. The mere fact that an alternative may cost somewhat more does not necessarily mean it is not practicable (see Sec. 230.10(a)(2) and discussion below). Because the applicant may rebut the presumption through a clear showing in a given case, no unreasonable hardship should be worked. At the same time, this presumption should have the effect of forcing a hard look at the feasibility of using environmentally preferable sites. This presumption responds to the overwhelming number of commenters who urged us to retain a water dependency test to discourage avoidable discharges in wetlands.

In addition, the 1975 provision effectively created a special, irrebuttable presumption that alternatives to wetlands were always less damaging to the aquatic ecosystem. Because our experience and the comments indicate that this is not always the case, and because there could be substantial impacts on other elements of the environment and only minor impacts on wetlands, we have chosen instead to impose an explicit, but rebuttable, presumption that alternatives to discharges in special aquatic sites are less damaging to the aquatic ecosystem and are environmentally preferable. Of course, the general requirement that impacts on the aquatic ecosystem not be unacceptable also applies. The legislative history of the Clean Water Act, Executive Order 11990, and a large body of scientific information support this presumption.

Apart from the fact that it may be rebutted, this second presumption reincorporates the key elements of the 1975 provision. Moreover, it strengthens it because the recognition of the special environmental role of wetlands now applies to all discharges in special aquatic sites, whether of dredged or fill material, and whether or not water dependent. At the same time, this presumption, like the first one described above, retains sufficient flexibility to reflect the circumstances of unusual cases.

Consistent with the general burden of proof under these Guidelines, where an applicant proposes to discharge in a special aquatic site it is his responsibility to persuade the permitting authority that both of these presumptions have clearly been rebutted in order to pass the alternatives portion of these Guidelines.

Therefore, we believe that the new Sec. 230.10(a)(3), which replaces proposed 230.10(e), will give special protection to wetlands and other special aquatic sites regardless of material discharged, allay industry's concerns about the "necessary" test, recognize the possibility of impacts on air and upland systems, and acknowledge the variability among aquatic sites and discharge activities.

Alternatives

Some commenters objected at length to the scope of alternatives which the Guidelines require to be considered, and to the requirement that a permit be denied unless the least harmful such alternative were selected. Others wrote to urge us to retain these requirements. In our judgment, a number of the objections were based on a misunderstanding of what the proposed alternatives analysis required. Therefore, we have decided to clarify the regulation, but have not changed its basic thrust.

Section 403(c) clearly requires that alternatives be considered, and provides the basic legal basis for our requirement. While the statutory provision leaves the Agency some discretion to decide how alternatives are to be considered, we believe that the policies and goals of the Act, as well as the other authorities cited in the Preamble to the proposed Guidelines, would be best served by the approach we have taken.

First, we emphasize that the only alternatives which must be considered are practicable alternatives. What is practicable depends on cost, technical, and logistic factors. We have changed the word "economic" to "cost". Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project. The term economic might be construed to include consideration of the applicant's financial standing, or investment, or market share, a cumbersome inquiry which is not necessarily material to the objectives of the Guidelines. We consider it implicit that, to be practicable, an alternative must be capable of achieving the basic purpose of the proposed activity. Nonetheless, we have made this explicit to allay widespread concern. Both "internal" and "external" alternatives, as described in the September 18, 1979 Preamble, must satisfy the practicable test. In order for an "external" alternative to be practicable, it must be reasonably available or obtainable. However, the mere fact of ownership or lack thereof, does not necessarily determine reasonable availability. Some readers were apparently confused by the Preamble to the Proposed Regulation, which referred to the fact the National Environmental Policy Act (NEPA) may require consideration of courses of action beyond the authority of the agency involved. We did not mean to suggest that the Guidelines were necessarily imposing such a requirement on private individuals but, rather, to suggest that what we were requiring was well within the alternatives analyses required by NEPA.

Second, once these practicable alternatives have been identified in this fashion, the permitting authority should consider whether any of them, including land disposal options, are less environmentally harmful than the proposed discharge project. Of course, where there is no significant or easily identifiable difference in impact, the alternative need not be considered to have "less adverse" impact.

Several commenters questioned the legal basis for requiring the permitting authority to select the least damaging alternative. (The use of the term "select" may have been misleading. Strictly speaking, the permitting authority does not select anything; he denies the permit if the guidelines requirements have not been complied with.) As mentioned above, the statute leaves to EPA's discretion the exact implementation of the alternative requirement in section 403 of the Act. In large part, the approach taken by these regulations is very similar to that taken by the recent section 403(c) regulations (45 FR 65942, October 3, 1980). There is one difference; the Guidelines always prohibit discharges where there is a practicable, less damaging alternative, while the section 403(c) regulations only apply this prohibition in some cases. This difference reflects the wide range of water systems subject to 404 and the extreme sensitivity of many of them to physical destruction. These waters form a priceless mosaic. Thus, if destruction of an area of waters of the United States may reasonably be avoided, it should be avoided. Of course, where a category of 404 discharges is so minimal in its effects that it has been placed under a general permit, there is no need to perform a case-by-case alternatives analysis. This

feature corresponds, in a sense, to the category of discharges under section 403 for which no alternatives analysis is required.

Third, some commenters were concerned that the alternative consideration was unduly focused on water quality, and that a better alternative from a water quality standpoint might be less desirable from, say, an air quality point of view. This concern overlooks the explicit provision that the existence of an alternative which is less damaging to the aquatic ecosystem does not disqualify a discharge if that alternative has other significant adverse environmental consequences. This last provision gives the permitting authority an opportunity to take into account evidence of damage to other ecosystems in deciding whether there is a "better" alternative.

Fourth, a number of commenters were concerned that the Guidelines ensure coordination with planning processes under the Coastal Zone Management Act, Sec. 208 of the CWA, and other programs. We agree that where an adequate alternatives analysis has already been developed, it would be wasteful not to incorporate it into the 404 process. New Sec. 230.10(a)(5) makes it clear that where alternatives have been reviewed under another process, the permitting authority shall consider such analysis. However, if the prior analysis is not as complete as the alternatives analysis required under the Guidelines, he must supplement it as needed to determine whether the proposed discharge complies with the Guidelines. Section 230.10(a)(4) recognizes that the range of alternatives considered in NEPA documents will be sufficient for section 404 purposes, where the Corps is the permitting authority. (However, a greater level of detail may be needed in particular cases to be adequate for the 404(b)(1) Guidelines analysis.) This distinction between the Corps and State permitting authorities is based on the fact that it is the Corps' policy, in carrying out its own NEPA responsibilities, to supplement (or require a supplement to) a lead agency's environmental assessment or impact statement where such document does not contain sufficient information. State permitting agencies, on the other hand, are not subject to NEPA in this manner.

We have moved proposed Sec. 230.10(a)(1) (iii), concerning "other particular volumes and concentrations of pollutants at other specific rates", from the list of alternatives in Sec. 230.10 to Subpart H, Minimizing Adverse Effects, because it more properly belongs there.

Definitions (Sec. 230.3)

A number of the terms defined in Sec. 230.3 are also defined in the Corps' regulations at 33 CFR 323.2, applicable to the Corps' regulatory program. The Corps has recently proposed some revisions to those regulations and expects to receive comments on the definitions. To ensure coordination of these two sets of regulations, we have decided to reserve the definitions of "discharge of dredged material," "discharge of fill material," "dredged material," and "fill material," which otherwise would have appeared at Sec. 230.3 (f), (g), (j), and (l).

Although the term "waters of the United States" also appears in the Corps' regulations, we have retained a definition here, in view of the importance of this key jurisdictional term and the numerous comments received. The definition and the comments are explained below.

Until new definitions are published, directly or by reference to the Corps' revised regulations, users of these Guidelines should refer to the definitions in 33 CFR 323.2 (except in the case of state 404 programs, to which the definitions in 40 CFR Sec. 122.3 apply.)

Waters of the United States: A number of commenters objected to the definition of "waters of the United States" because it was allegedly outside the scope of the Clean Water Act or of the Constitution or because it was not identical to the Corps' definition. We have retained the proposed

definition with a few minor changes for clarity for several reasons. First, a number of courts have held that this basic definition of waters of the United States reasonably implements section 502(7) of the Clean Water Act, and that it is constitutional (e.g., *United States v. Byrd*, 609 F.2d 1204, 7th Cir. 1979; *Leslie Salt Company v. Froehlke*, 578 F.2d 742, 9th Cir. 1978). Second, we agree that it is preferable to have a uniform definition for waters of the United States, and for all regulations and programs under the CWA. We have decided to use the wording in the recent Consolidated Permit Regulations, 45 Fed. Reg. 33290, May 19, 1980, as the standard.*

Some commenters suggested that the reference in the definition to waters from which fish are taken to be sold in interstate commerce be expanded to include areas where such fish spawn. While we have not made this change because we wish to maintain consistency with the wording of the Consolidated Permit regulations, we do not intend to suggest that a spawning area may not have significance for commerce. The portion of the definition at issue lists major examples, not all the ways which commerce may be involved.

Some reviewers questioned the statement in proposed Sec. 230.72(c) (now Sec. 230.11(h)) that activities on fast land created by a discharge of dredged or fill material are considered to be in waters of the United States for purposes of these Guidelines. The proposed language was misleading and we have changed it to more accurately reflect our intent. When a portion of the Waters of the United States has been legally converted to fast land by a discharge of dredged or fill material, it does not remain waters of the United States subject to section 301(a). The discharge may be legal because it was authorized by a permit or because it was made before there was a permit requirement. In the case of an illegal discharge, the fast land may remain subject to the jurisdiction of the Act until the government determines not to seek restoration. However, in authorizing a discharge which will create fast lands, the permitting authority should consider, in addition to the direct effects of the fill itself, the effects on the aquatic environment of any reasonably foreseeable activities to be conducted on that fast land.

Section 230.54 (proposed 230.41) deals with impacts on parks, national and historical monuments, national sea shores, wilderness areas, research sites, and similar preserves. Some readers were concerned that we intended the Guidelines to apply to activities in such preserves whether or not the activities took place in waters of the United States. We intended, and we think the context makes it clear, that the Guidelines apply only to the specification of discharge sites in the waters of the United States, as defined in Sec. 230.3. We have included this section because the fact that a water of the United States may be located in one of these preserves is significant in evaluating the impacts of a discharge into that water.

Wetlands: Many wetlands are waters of the United States under the Clean Water Act. Wetlands are also the subject of Federal Executive Order No. 11990, and various Federal and State laws and regulations. A number of these other programs and laws have developed slightly different wetlands definitions, in part to accommodate or emphasize specialized needs. Some of these definitions include, not only wetlands as these Guidelines define them, but also mud flats and vegetated and unvegetated shallows. Under the Guidelines some of these other areas are grouped with wetlands as "Special Aquatic Sites" (Subpart E) and as such their values are given special recognition. (See discussion of Water Dependency above.) We agree with the comment that the National Inventory of Wetlands prepared by the U.S. Fish and Wildlife Service, while not necessarily exactly coinciding with the

*The Consolidated Permit Regulations exclude certain waste treatment systems from waters of the United States. The exact terms of this exclusion are undergoing technical revisions and are expected to change shortly. For this reason, these Guidelines as published do not contain the exclusion as originally worded in the Consolidated Permit Regulations. When published, the corrected exclusion will apply to the Guidelines as well as the Consolidated Permit Regulations.

scope of waters of the United States under the Clean Water Act or wetlands under these regulations, may help avoid construction in wetlands, and be a useful long-term planning tool.

Various commenters objected to the definition of wetlands in the Guidelines as too broad or too vague. This proposed definition has been upheld by the courts as reasonable and consistent with the Clean Water Act, and is being retained in the final regulation. However, we do agree that vegetative guides and other background material may be helpful in applying the definition in the field. EPA and the Corps are pledged to work on joint research to aid in jurisdictional determinations. As we develop such materials, we will make them available to the public.

Other commenters suggested that we expand the list of examples in the second sentence of the wetland definition. While their suggested additions could legally be added, we have not done so. The list is one of examples only, and does not serve as a limitation on the basic definition. We are reluctant to start expanding the list, since there are many kinds of wetlands which could be included, and the list could become very unwieldy.

In addition, we wish to avoid the confusion which could result from listing as examples, not only areas which generally fit the wetland definitions, but also areas which may or not meet the definition depending on the particular circumstances of a given site. In sum, if an area meets the definition, it is a wetland for purposes of the Clean Water Act, whether or not it falls into one of the listed examples. Of course, more often than not, it will be one of the listed examples.

A few commenters cited alleged inconsistencies between the definition of wetlands in Sec. 230.3 and Sec. 230.42. While we see no inconsistency, we have shortened the latter section as part of our effort to eliminate unnecessary comments.

Unvegetated Shallows: One of the special aquatic areas listed in the proposal was "unvegetated shallows" (Sec. 230.44). Since special aquatic areas are subject to the presumptions in Sec. 230.10(a)(3), it is important that they be clearly defined so that the permitting authority may readily know when to apply the presumptions. We were unable to develop, at this time, a definition for unvegetated shallows which was both easy to apply and not too inclusive or exclusive. Therefore, we have decided the wiser course is to delete unvegetated shallows from the special aquatic area classification. Of course, as waters of the United States, they are still subject to the rest of the Guidelines.

"Fill Material": We are temporarily reserving Sec. 230.3(1). Both the proposed Guidelines and the proposed Consolidated Permit Regulations defined fill material as material discharged for the primary purpose of replacing an aquatic area with dryland or of changing the bottom elevation of a water body, reserving to the NPDES program discharges with the same effect which are primarily for the purpose of disposing of waste. Both proposals solicited comments on this distinction, referred to as the primary purpose test. On May 19, 1980, acting under a court-imposed deadline, EPA issued final Consolidated Permit Regulations while the 404(b)(1) Guidelines rulemaking was still pending. These Consolidated Permit Regulations contained a new definition of fill material which eliminated the primary purpose test and included as fill material all pollutants which have the effect of fill, that is, which replace part of the waters of the United States with dryland or which change the bottom elevation of a water body for any purpose. This new definition is similar to the one used before 1977.

During the section 404(b)(1) rulemaking, the Corps has raised certain questions about the implementation of such a definition. Because of the importance of making the Final Guidelines available without further delay, and because of our desire to cooperate with the Corps in resolving their concerns about fill material, we have decided to temporarily reserve Sec. 230.3(1) pending further

discussion. This action does not affect the effectiveness of the Consolidated Permit Regulations. Consequently, there is a discrepancy between those regulations and the Corps' regulations, which still contain the old definition.

Therefore, to avoid any uncertainty from this situation, EPA wishes to make clear its enforcement policy for unpermitted discharges of solid waste. EPA has authority under section 309 of the CWA to issue administrative orders against violations of section 301. Unpermitted discharges of solid waste into waters of the United States violate section 301.

Under the present circumstances, EPA plans to issue solid waste administrative orders with two basic elements. First, the orders will require the violator to apply to the Corps of Engineers for a section 404 permit within a specified period of time. (The Corps has agreed to accept these applications and to hold them until it resolves its position on the definition of fill material.)

Second, the order will constrain further discharges by the violator. In extreme cases, an order may require that discharges cease immediately. However, because we recognize that there will be a lapse of time before decisions are made on this kind of permit application, these orders may expressly allow unpermitted discharges to continue subject to specific conditions set forth by EPA in the order. These conditions will be designed to avoid further environmental damage.

Of course, these orders will not influence the ultimate issuance or non-issuance of a permit or determine the conditions that may be specified in such a permit. Nor will such orders limit the Administrator's authority under section 309(b) or the right of a citizen to bring suit against a violator under section 505 of the CWA.

Permitting Authority: We have used the new term "permitting authority," instead of "District Engineer," throughout these regulations, in recognition of the fact that under the 1977 amendments approved States may also issue permits.

Coastal Zone Management Plans

Several commenters were concerned about the relationship between section 404 and approved Coastal Zone Management (CZM) plans. Some expressed concern that the Guidelines might authorize a discharge prohibited by a CZM plan; others objected to the fact that the Guidelines might prohibit a discharge which was consistent with a CZM plan.

Under section 307(b) of the CZM Act, no Federal permits may be issued until the applicant furnishes a certification that the discharge is consistent with an approved CZM plan, if there is one, and the State concurs in the certification or waives review. Section 325.2(b)(2) of the Corps' regulation, which applies to all Federal 404 permits, implements this requirement for section 404. Because the Corps' regulations adequately address the CZM consistency requirement, we have not duplicated Sec. 325.2(b)(2) in the Guidelines. Where a State issues State 404 permits, it may of course require consistency with its CZM plan under State law.

The second concern, that the 404 Guidelines might be stricter than a CZM plan, points out a possible problem with CZM plans, not with the Guidelines. Under 307(f) of CZMA, all CZM plans must provide for compliance with applicable requirements of the Clean Water Act. The Guidelines are one such requirement. Of course, to the extent that a CZM plan is general and area-wide, it may be impossible to include in its development the same project-specific consideration of impacts and alternatives required under the Guidelines. Nonetheless, it cannot authorize or mandate a discharge of dredged or fill material which fails to comply with the requirements of these Guidelines. Often CZM

plans contain a requirement that all activities conducted under it meet the permit requirements of the Clean Water Act. In such a case, there could of course be no conflict between the CZM plan and the requirements of the Guidelines.

We agree with commenters who urge that delay and duplication of effort be avoided by consolidating alternatives studies required under different statutes, including the Coastal Zone Management Act. However, since some planning processes do not deal with specific projects, their consideration of alternatives may not be sufficient for the Guidelines. Where another alternative analysis is less complete than that contemplated under section 404, it may not be used to weaken the requirements of the Guidelines.

Advanced Identification of Dredged or Fill Material Disposal Sites

A large number of commenters objected to the way proposed Sec. 230.70, new Subpart I, had been changed from the 1975 regulations. A few objected to the section itself. Most of the comments also revealed a misunderstanding about the significance of identifying an area. First, the fact that an area has been identified as unsuitable for a potential discharge site does not mean that someone cannot apply for and obtain a permit to discharge there as long as the Guidelines and other applicable requirements are satisfied.* Conversely, the fact that an area has been identified as a potential site does not mean that a permit is unnecessary or that one will automatically be forthcoming. The intent of this section was to aid applicants by giving advance notice that they would have a relatively easy or difficult time qualifying for a permit to use particular areas. Such advance notice should facilitate applicant planning and shorten permit processing time.

Most of the objectors focused on EPA's "abandonment" of its "authority" to identify sites. While that "authority" is perhaps less "authoritative" than the commenters suggested (see above), we agree that there is no reason to decrease EPA's role in the process. Therefore, we have changed new Sec. 230.80(a) to read:

"Consistent with these Guidelines, EPA and the permitting authority on their own initiative or at the request of any other party, and after consultation with any affected State that is not the permitting authority, may identify sites which will be considered as:"

We have also deleted proposed Sec. 230.70(a)(3), because it did not seem to accomplish much. Consideration of the point at which cumulative and secondary impacts become unacceptable and warrant emergency action will generally be more appropriate in a permit-by-permit context. Once that point has been so determined, of course, the area can be identified as "unsuitable" under the new Sec. 230.80(a)(2).

Executive Order 12044

A number of commenters took the position that Executive Order 12044 requires EPA to prepare a "regulatory analysis" in connection with these regulations. EPA disagrees. These regulations are not, strictly speaking, new regulations. They do not impose new standards or requirements, but rather substantially clarify and reorganize the existing interim final regulations

*EPA may foreclose the use of a site by exercising its authority under section 404(c). The advance identification referred to in this section is not a section 404(c) prohibition.

Under EPA's criteria implementing Executive Order 12044, EPA will prepare a Regulatory Analysis for any regulation which imposes additional annual costs totalling \$100 million or which will result in a total additional cost of production of any major product or service which exceeds 5% of its selling price. While many commenters, particularly members of the American Association of Port Authorities (AAPA), requested a regulatory analysis and claimed that the regulations were too burdensome, none of them explained how that burden was an additional one attributable to this revision. A close comparison of the new regulation and the explicit and implicit requirements in the interim final Guidelines reveals that there has been very little real change in the criteria by which discharges are to be judged or in the tests that must be conducted; therefore, we stand by our original determination that a regulatory analysis is not required.

Perhaps the most significant area in which the regulations are more explicit and arguably stricter is in the consideration of alternatives. However, even the 1975 regulations required the permitting authority to consider "the availability of alternate sites and methods of disposal that are less damaging to the environment," and to avoid activities which would have significant adverse effects. We do not think that the revised Guidelines' more explicit direction to avoid adverse effects that could be prevented through selection of a clearly less damaging site or method is a change imposing a substantial new burden on the regulated public.

Because the revised regulations are more explicit than the interim final regulations in some respects, it is possible that permit reviewers will do a more thorough job evaluating proposed discharges. This may result in somewhat more carefully drawn permit conditions. However, even if, for purposes of argument, the possible cost of complying with these conditions is considered an additional cost, there is no reason to believe that it alone will be anywhere near \$100 million annually.

We also believe that it is appropriate to recognize the regulatory benefits from these more carefully drafted final regulations. Because they are much clearer about what should be considered and documented, we expect there will be fewer delays in reviewing permits, and that initial decisions to issue permits are less likely to be appealed to higher authority. These benefits are expected to offset any potential cost increase.

Some commenters suggested that documentation requirements would generate an additional cost of operations. The Corps' procedural regulations at 33 CFR 325.8 and 325.11 already require extensive documentation for individual permits being denied or being referred to higher authority for resolution of a conflict between agencies.

Economic Factors

A number of commenters asked EPA to include consideration of economic factors in the Guidelines. We believe that the regulation already recognizes economic factors to the extent contemplated by the statute. First, the Guidelines explicitly include the concept of "practicability" in connection with both alternatives and steps to minimize impacts. If an alleged alternative is unreasonably expensive to the applicant, the alternative is not "practicable." In addition, the Guidelines also consider economics indirectly in that they are structured to avoid the expense of unnecessary testing through the "reason-to-believe-test." Second, the statute expressly provides that the economics of anchorage and navigation may be considered, but only after application of the section 404(b)(1) Guidelines. (See section 404(b)(2).)

Borrow Sites

A number of highway departments objected because they felt the Guidelines would require them to identify specific borrow sites at the time of application, which would disrupt their normal contracting process and increase cost. These objections were based on a misunderstanding of the Guideline's requirements. Under those Guidelines, the actual borrow sites need not be identified, if the application and the permit specify that the discharge material must come from clean upland sites which are removed from sources of contamination and otherwise satisfy the reason-to-believe test. A condition that the material come from such a site would enable the permitting authority to make his determinations and find compliance with the conditions of Sec. 230.10, without requiring highway departments to specify in advance the specific borrow sites to be used.

Consultation With Fish and Wildlife Agencies

One commenter wanted us to put in a statement that the Fish and Wildlife Coordination Act requires consultation with fish and wildlife agencies. We have not added new language because (1) the Fish and Wildlife Act only applies to Federal permitting agencies and not to State permitting agencies, and (2) the Corps' regulations already provide for such consultation by the only Federal 404 permitting agency. However, we agree with the commenter that Federal and State fish and wildlife agencies may often provide valuable assistance in evaluating the impacts of discharges of dredged or fill material.

The Importance of Appropriate Documentation

Specific documentation is important to ensure an understanding of the basis for each decision to allow, condition, or prohibit a discharge through application of the Guidelines. Documentation of information is required for: (1) facts and data gathered in the evaluation and testing of the extraction site, the material to be discharged, and the disposal site; (2) factual determinations regarding changes that can be expected at the disposal site if the discharge is made as proposed; and (3) findings regarding compliance with Sec. 230.10 conditions. This documentation provides a record of actions taken that can be evaluated for adequacy and accuracy and ensures consideration of all important impacts in the evaluation of a proposed discharge of dredged or fill material.

The specific information documented under (1) and (2) above in any given case depends on the level of investigation necessary to provide for a reasonable understanding of the impact on the aquatic ecosystems. We anticipate that a number of individual and most General permit applications will be for routine, minor activities with little potential for significant adverse environmental impacts. In such cases, the permitting authority will not have to require extensive testing or analysis to make his findings of compliance. The level of documentation should reflect the significance and complexity of the proposed discharge activity.

Factual Determinations

Proposed section 230.20, "Factual Determinations" (now Sec. 230.11) has been significantly reorganized in response to comments. First, we have changed (e) to reflect our elimination of the artificial distinction between the section 307(a)(1) toxics and other contaminants. Second, we have eliminated proposed (f) (Biological Availability), since the necessary information will be provided by (d) and new (e). Proposed (f) was intended to reflect the presumption that toxics were present and biologically available. We have modified proposed (g), now (f), to focus on the size of the disposal site and the size and shape of the mixing zone. The specific requirement to document the site has been deleted; where such information is relevant, it will automatically be considered in making the other determinations. We have also deleted proposed (h) (Special Determinations) since it did not provide

any useful information which would not already be considered in making the other factual determinations.

Finally, in response to many comments, we have moved the provisions on cumulative and secondary impact to the Factual Determination section to give them further emphasis. We agree that such impacts are an important consideration in evaluating the acceptability of a discharge site.

Water Quality Standards

One commenter was concerned that the reference Sec. 230.10(b) to water quality standards and criteria "approved or promulgated under section 303" might encourage permit authorities to ignore other water quality requirements. Under section 303, all State water quality standards are to be submitted to EPA for approval. If the submitted standards are incomplete or insufficiently stringent, EPA may promulgate standards to replace or supplant the State standards. Disapproved standards remain in effect until replaced. Therefore, to refer to "EPA approved or promulgated standards" is to ignore those State standards which have been neither approved nor replaced. We have therefore changed the wording of this requirement as follows: "* * * any applicable State water quality standard." We have also dropped the reference to "criteria", to be consistent with the Agency's general position that water quality criteria are not regulatory.

Other Requirements for Discharge

Section 230.10(c) provides that discharges are not permitted if they will have "significantly" adverse effects on various aquatic resources. In this context, "significant" and "significantly" mean more than "trivial", that is, significant in a conceptual rather than a statistical sense. Not all effects which are statistically significant in the laboratory are significantly adverse in the field.

Section 320.10(d) uses the term "minimize" to indicate that all reasonable reduction in impacts be obtained. As indicated by the "appropriate and practicable" provision, steps which would be unreasonably costly or would be infeasible or which would accomplish only inconsequential reductions in impact need not be taken.

Habitat Development and Restoration of Water Bodies

Habitat development and restoration involve changes in open water and wetlands that minimize adverse effects of proposed changes or that neutralize or reverse the effects of past changes on the ecosystem. Development may produce a new or modified ecological state by displacement of some or all of the existing environmental characteristics. Restoration has the potential to return degraded environments to their former ecological state.

Habitat development and restoration can contribute to the maintenance and enhancement of a viable aquatic ecosystem at the discharge site. From an environmental point of view, a project involving the discharge of dredged and fill material should be designed and managed to emulate a natural ecosystem. Research, demonstration projects, and full scale implementation have been done in many categories of development and restoration. The U.S. Fish and Wildlife Service has programs to develop and restore habitat. The U.S. Army Engineer Waterways Experiment Station has published guidelines for using dredged material to develop wetland habitat, for establishing marsh vegetation, and for building islands that attract colonies of nesting birds. The EPA has a Clean Lakes program which supplies funds to States and localities to enhance or restore degraded lakes. This may involve dredging nutrient-laden sediments from a lake and ensuring that nutrient inflows to the lake are controlled. Restoration and habitat development techniques can be used to minimize adverse impacts

and compensate for destroyed habitat. Restoration and habitat development may also provide secondary benefits such as improved opportunities for outdoor recreation and positive use for dredged materials.

The development and restoration of viable habitats in water bodies requires planning and construction practices that integrate the new or improved habitat into the existing environment. Planning requires a model or standard, the achievement of which is attempted by manipulating design and implementation of the activity. This model or standard should be based on characteristics of a natural ecosystem in the vicinity of a proposed activity. Such use of a natural ecosystem ensures that the developed or restored area, once established, will be nourished and maintained physically, chemically and biologically by natural processes. Some examples of natural ecosystems include, but are not limited to, the following: salt marsh, cattail marsh, turtle grass bed, small island, etc.

Habitat development and restoration, by definition, should have environmental enhancement and maintenance as their initial purpose. Human uses may benefit but they are not the primary purpose. Where such projects are not founded on the objectives of maintaining ecosystem function and integrity, some values may be favored at the expense of others. The ecosystem affected must be considered in order to achieve the desired result of development and restoration. In the final analysis, selection of the ecosystem to be emulated is of critical importance and a loss of value can occur if the wrong model or an incomplete model is selected. Of equal importance is the planning and management of habitat development and restoration on a case-by-case basis.

Specific measures to minimize impacts on the aquatic ecosystem by enhancement and restoration projects include but are not limited to:

(1) Selecting the nearest similar natural ecosystem as the model in the implementation of the activity.

Obviously degraded or significantly less productive habitats may be considered prime candidates for habitat restoration. One viable habitat, however, should not be sacrificed in an attempt to create another, i.e., a productive vegetated shallow water area should not be destroyed in an attempt to create a wetland in its place.

(2) Using development and restoration techniques that have been demonstrated to be effective in circumstances similar to those under consideration wherever possible.

(3) Where development and restoration techniques proposed for use have not yet advanced to the pilot demonstration or implementation stage, initiate their use on a small scale to allow corrective action if unanticipated adverse impacts occur.

(4) Where Federal funds are spent to clean up waters of the U.S. through dredging, scientifically defensible levels of pollutant concentration in the return discharge should be agreed upon with the funding authority in addition to any applicable water quality standards in order to maintain the desired improved water quality.

(5) When a significant ecological change in the aquatic environment is proposed by the discharge of dredged or fill material, the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.

Dated: December 12, 1980.

Douglas M. Costle,

Administrator, Environmental Protection Agency.

Part 230 is revised to read as follows:

PART 230 -- SECTION 404(b)(1) GUIDELINES FOR SPECIFICATION OR DISPOSAL SITES FOR DREDGED OF FILL MATERIAL

Subpart A -- General

Sec.

230.1 Purpose and policy.

230.2 Applicability.

230.3 Definitions.

230.4 Organization.

230.5 General procedures to be followed.

230.6 Adaptability.

230.7 General permits.

Subpart B -- Compliance With the Guidelines

230.10 Restrictions on discharge.

230.11 Factual determinations.

230.12 Findings of compliance or non-compliance with the restrictions on discharge.

Subpart C -- Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

230.20 Substrate.

230.21 Suspended particulates/turbidity.

230.22 Water.

230.23 Current patterns and water circulation.

230.24 Normal water fluctuations.

230.25 Salinity gradients.

Subpart D -- Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

230.30 Threatened and endangered species.

230.31 Fish, crustaceans, mollusks, and other aquatic organisms in the food web.

230.32 Other wildlife.

Subpart E -- Potential Impacts on Special Aquatic Sites

230.40 Sanctuaries and refuges.

230.41 Wetlands.

230.42 Mud flats.

230.43 Vegetated shallows.

230.44 Coral reefs.

230.45 Riffle and pool complexes.

Subpart F -- Potential Effects on Human Use Characteristics

230.50 Municipal and private water supplies.

230.51 Recreational and commercial fisheries.

230.52 Water-related recreation.

230.53 Aesthetics.

230.54 Parks, national and historic monuments, national seashores, wilderness areas, research sites and similar preserves.

Subpart G -- Evaluation and Testing

230.60 General evaluation of dredged or fill material.

230.61 Chemical, biological, and physical evaluation and testing.

Subpart H -- Actions to Minimize Adverse Effects

230.70 Actions concerning the location of the discharge.

230.71 Actions concerning the material to be discharged.

230.72 Actions controlling the material after discharge.

230.73 Actions affecting the method of dispersion.

230.74 Actions related to technology.

230.75 Actions affecting plant and animal populations.

230.76 Actions affecting human use.

230.77 Other actions.

Subpart I -- Planning To Shorten Permit Processing Time

230.80 Advanced identification of disposal areas.

Authority: This regulation is issued under authority of Sections 404(b) and 501(a) of the Clean Water Act of 1977, 33 U.S.C. Sec. 1344(b) and Sec. 1361(a).

Subpart A -- General

Sec. 23.1 Purpose and policy.

- (a) The purpose of these Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material.
- (b) Congress has expressed a number of policies in the Clean Water Act. These Guidelines are intended to be consistent with and to implement those policies.
- (c) Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.
- (d) From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these Guidelines. The guiding principle should be that degradation or destruction of special sites may represent an irreversible loss of valuable aquatic resources.

Sec. 230.2 Applicability.

- (a) These Guidelines have been developed by the Administrator of the Environmental Protection Agency in conjunction with the Secretary of the Army acting through the Chief of Engineers under section 404(b)(1) of the Clean Water Act (33 U.S.C. 1344). The Guidelines are applicable to the specification of disposal sites for discharges of dredged or fill material into waters of the United States. Sites may be specified through:
 - (1) The regulatory program of the U.S. Army Corps of Engineers under sections 404(a) and (e) of the Act (see 33 CFR 320, 323 and 325);
 - (2) The civil works program of the U.S. Army Corps of Engineers (see 33 CFR 209.145 and section 150 of Pub. L. 94-587, Water Resources Development Act of 1976);
 - (3) Permit programs of States approved by the Administrator of the Environmental Protection Agency in accordance with sections 404(g) and (h) of the Act (see 40 CFR 122, 123 and 124); (4) Statewide dredged or fill material regulatory programs with best management practices approved under section 208(b)(4)(B) and (C) of the Act (see 40 CFR 35.1560);
 - (5) Federal construction projects which meet criteria specified in section 404(r) of the Act.
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(b) These Guidelines will be applied in the review of proposed discharges of dredged or fill material into navigable waters which lie inside the baseline from which the territorial sea is measured, and the discharge of fill material into the territorial sea, pursuant to the procedures referred to in paragraphs (a)(1) and (a)(2) above. The discharge of dredged material into the territorial sea is governed by the Marine Protection, Research, and Sanctuaries Act of 1972, Pub. L. 92-532, and regulations and criteria issued pursuant thereto (40 CFR Part 220-228).

(c) Guidance on interpreting and implementing these Guidelines may be prepared jointly by EPA and the Corps at the national or regional level from time to time. No modifications to the basic application, meaning, or intent of these Guidelines will be made without rulemaking by the Administrator under the Administrative Procedure Act (5 U.S.C. 551 et seq.).

Sec. 230.3 Definitions.

For purposes of this Part, the following terms shall have the meanings indicated:

(a) The term "Act" means the Clean Water Act (also known as the Federal Water Pollution Control Act or FWPCA) Pub. L. 92-500, as amended by Pub. L. 95-217, 33 U.S.C. 1251, et seq.

(b) The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are "adjacent wetlands."

(c) The terms "aquatic environment" and "aquatic ecosystem" mean waters of the United States, including wetlands, that serve as habitat for interrelated and interacting communities and populations of plants and animals.

(d) The term "carrier of contaminant" means dredged or fill material that contains contaminants.

(e) The term "contaminant" means a chemical or biological substance in a form that can be incorporated into, onto or be ingested by and that harms aquatic organisms, consumers of aquatic organisms, or users of the aquatic environment, and includes but is not limited to the substances on the 307(a)(1) list of toxic pollutants promulgated on January 31, 1978 (43 FR 4109).

(f) [Reserved]

(g) [Reserved]

(h) The term "discharge point" means the point within the disposal site at which the dredged or fill material is released.

(i) The term "disposal site" means that portion of the "waters of the United States" where specific disposal activities are permitted and consist of a bottom surface area and any overlying volume of water. In the case of wetlands on which surface water is not present, the disposal site consists of the wetland surface area.

(j) [Reserved]

(k) The term "extraction site" means the place from which the dredged or fill material proposed for discharge is to be removed.

(l) [Reserved]

(m) The term "mixing zone" means a limited volume of water serving as a zone of initial dilution in the immediate vicinity of a discharge point where receiving water quality may not meet quality standards or other requirements otherwise applicable to the receiving water. The mixing zone should be considered as a place where wastes and water mix and not as a place where effluents are treated.

(n) The term "permitting authority" means the District Engineer of the U.S. Army Corps of Engineers or such other individual as may be designated by the Secretary of the Army to issue or deny permits under section 404 of the Act; or the State Director of a permit program approved by EPA under Sec. 404(g) and Sec. 404(h) or his delegated representative.

(o) The term "pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials not covered by the Atomic Energy Act, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. The legislative history of the Act reflects that "radioactive materials" as included within the definition of "pollutant" in section 502 of the Act means only radioactive materials which are not encompassed in the definition of source, byproduct, or special nuclear materials as defined by the Atomic Energy Act of 1954, as amended, and regulated under the Atomic Energy Act. Examples of radioactive materials not covered by the Atomic Energy Act and, therefore, included within the term "pollutant", are radium and accelerator produced isotopes. See *Train v. Colorado Public Interest Research Group, Inc.*, 426 U.S. 1 (1976).

(p) The term "pollution" means the man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of an aquatic ecosystem.

(q) The term "practicable" means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

(q-1) "Special aquatic sites" means those sites identified in Subpart E. They are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. (See 230.10(a)(3)) (r) The term "territorial sea" means the belt of the sea measured from the baseline as determined in accordance with the Convention on the Territorial Sea and the Contiguous Zone and extending seaward a distance of three miles.

(s) The term "waters of the united States" means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

- (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
- (iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States under this definition.
- (5) Tributaries of waters identified in paragraphs (1)-(4) of this section;
- (6) The territorial sea;
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s) (1)-(6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR Sec. 423.11(m) which also meet the criteria of this definition) are not waters of the United States.
- (t) The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Sec. 230.4 Organization.

The Guidelines are divided into eight subparts. Subpart A presents those provisions of general applicability, such as purpose and definitions. Subpart B establishes the four conditions which must be satisfied in order to make a finding that a proposed discharge of dredged or fill material complies with the Guidelines. Section 230.11 of Subpart B, sets forth factual determinations which are to be considered in determining whether or not a proposed discharge satisfies the Subpart B conditions of compliance. Subpart C describes the physical and chemical components of a site and provides guidance as to how proposed discharges of dredged or fill material may affect these components. Subparts D-F detail the special characteristics of particular aquatic ecosystems in terms of their values, and the possible loss of these values due to discharges of dredged or fill material. Subpart G prescribes a number of physical, chemical, and biological evaluations and testing procedures to be used in reaching the required factual determinations. Subpart H details the means to prevent or minimize adverse effects. Subpart I concerns advanced identification of disposal areas.

Sec. 230.5 General procedures to be followed.

In evaluating whether a particular discharge site may be specified, the permitting authority should use these Guidelines in the following sequence:

- (a) In order to obtain an overview of the principal regulatory provisions of the Guidelines, review the restrictions on discharge in Sec. 230.10(a)-(d), the measures to minimize adverse impact of Subpart H, and the required factual determinations of Sec. 230.11.
 - (b) Determine if a General permit (Sec. 230.7) is applicable; if so, the applicant needs merely to comply with its terms, and no further action by the permitting authority is necessary. Special conditions for evaluation of proposed General permits are contained in Sec. 230.7. If the discharge is not covered by a General permit:
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(c) Examine practicable alternatives to the proposed discharge, that is, not discharging into the waters of the U.S. or discharging into an alternative aquatic site with potentially less damaging consequences (Sec. 230.10(a)).

(d) Delineate the candidate disposal site consistent with the criteria and evaluations of Sec. 230.11(f).

(e) Evaluate the various physical and chemical components which characterize the non-living environment of the candidate site, the substrate and the water including its dynamic characteristics (Subpart C).

(f) Identify and evaluate any special or critical characteristics of the candidate disposal site, and surrounding areas which might be affected by use of such site, related to their living communities or human uses (Subparts D, E, and F).

(g) Review Factual Determinations in Sec. 230.11 to determine whether the information in the project file is sufficient to provide the documentation required by Sec. 230.11 or to perform the pre-testing evaluation described in Sec. 230.60, or other information is necessary.

(h) Evaluate the material to be discharged to determine the possibility of chemical contamination or physical incompatibility of the material to be discharged (Sec. 230.60).

(i) If there is a reasonable probability of chemical contamination, conduct the appropriate tests according to the section on Evaluation and Testing (Sec. 230.61).

(j) Identify appropriate and practicable changes to the project plan to minimize the environmental impact of the discharge, based upon the specialized methods of minimization of impacts in Subpart H.

(k) Make and document Factual Determinations in Sec. 230.11.

(l) Make and document Findings of Compliance (Sec. 230.12) by comparing Factual Determinations with the requirements for discharge of Sec. 230.10.

This outline of the steps to follow in using the Guidelines is simplified for purposes of illustration. The actual process followed may be iterative, with the results of one step leading to a reexamination of previous steps. The permitting authority must address all of the relevant provisions of the Guidelines in reaching a Finding of Compliance in an individual case.

Sec. 230.6 Adaptability.

(a) The manner in which these Guidelines are used depends on the physical, biological, and chemical nature of the proposed extraction site, the material to be discharged, and the candidate disposal site, including any other important components of the ecosystem being evaluated. Documentation to demonstrate knowledge about the extraction site, materials to be extracted, and the candidate disposal site is an essential component of guideline application. These Guidelines allow evaluation and documentation for a variety of activities, ranging from those with large, complex impacts on the aquatic environment to those for which the impact is likely to be innocuous. It is unlikely that the Guidelines will apply in their entirety to any one activity, no matter how complex. It is anticipated that substantial numbers of permit applications will be for minor, routine activities that have little, if any, potential for significant degradation of the aquatic environment. It generally is not intended or expected that extensive testing, evaluation or analysis will be needed to make findings of compliance

in such routine cases. Where the conditions for General permits are met, and where numerous applications for similar activities are likely, the use of General permits will eliminate repetitive evaluation and documentation for individual discharges.

(b) The Guidelines user, including the agency or agencies responsible for implementing the Guidelines, must recognize the different levels of effort that should be associated with varying degrees of impact and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity.

(c) An essential part of the evaluation process involves making determinations as to the relevance of any portion(s) of the Guidelines and conducting further evaluation only as needed. However, where portions of the Guidelines review procedure are "short form" evaluations, there still must be sufficient information (including consideration of both individual and cumulative impacts) to support the decision of whether to specify the site for disposal of dredged or fill material and to support the decision to curtail or abbreviate the evaluation process. The presumption against the discharge in Sec. 230.1 applies to this decision-making.

(d) In the case of activities covered by General permits or 208(b)(4)(B) and (C) Best Management Practices, the analysis and documentation required by the Guidelines will be performed at the time of General permit issuance or 208(b)(4)(B) and (C) Best Management Practices promulgation and will not be repeated when activities are conducted under a General permit or 208(b)(4)(B) and (C) Best Management Practices control. These Guidelines do not require reporting or formal written communication at the time individual activities are initiated under a General permit or 208(b)(4)(B) and (C) Best Management Practices. However, a particular General permit may require appropriate reporting.

Sec. 230.7 General permits.

(a) Conditions for the issuance of General permits. A General permit for a category of activities involving the discharge of dredged or fill material complies with the Guidelines if it meets the applicable restrictions on the discharge in Sec. 230.10 and if the permitting authority determines that:

(1) The activities in such category are similar in nature and similar in their impact upon water quality and the aquatic environment;

(2) The activities in such category will have only minimal adverse effects when performed separately; and

(3) The activities in such category will have only minimal cumulative adverse effects on water quality and the aquatic environment.

(b) Evaluation process. To reach the determinations required in paragraph (a) of this section, the permitting authority shall set forth in writing an evaluation of the potential individual and cumulative impacts of the category of activities to be regulated under the General permit. While some of the information necessary for this evaluation can be obtained from potential permittees and others through the proposal of General permits for public review, the evaluation must be completed before any General permit is issued, and the results must be published with the final permit.

(1) This evaluation shall be based upon consideration of the prohibitions listed in Sec. 230.10(b) and the factors listed in Sec. 230.10(c), and shall include documented information supporting each factual

determination in Sec. 230.11 of the Guidelines (consideration of alternatives in Sec. 230.10(a) are not directly applicable to General permits);

(2) The evaluation shall include a precise description of the activities to be permitted under the General permit, explaining why they are sufficiently similar in nature and in environmental impact to warrant regulation under a single General permit based on Subparts C-F of the Guidelines. Allowable differences between activities which will be regulated under the same General permit shall be specified. Activities otherwise similar in nature may differ in environmental impact due to their location in or near ecologically sensitive areas, areas with unique chemical or physical characteristics, areas containing concentrations of toxic substances, or areas regulated for specific human uses or by specific land or water management plans (e.g., areas regulated under an approved Coastal Zone Management Plan). If there are specific geographic areas within the purview of a proposed General permit (called a draft General permit under a State 404 program), which are more appropriately regulated by individual permit due to the considerations cited in this paragraph, they shall be clearly delineated in the evaluation and excluded from the permit. In addition, the permitting authority may require an individual permit for any proposed activity under a General permit where the nature or location of the activity makes an individual permit more appropriate.

(3) To predict cumulative effects, the evaluation shall include the number of individual discharge activities likely to be regulated under a General permit until its expiration, including repetitions of individual discharge activities at a single location.

Subpart B -- Compliance With the Guidelines

Sec. 230.10 Restrictions on discharge.

Note. -- Because other laws may apply to particular discharges and because the Corps of Engineers or State 404 agency may have additional procedural and substantive requirements, a discharge complying with the requirement of these Guidelines will not automatically receive a permit.

Although all requirements in Sec. 230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystems posed by specific dredged or fill material discharge activities.

(a) Except as provided under Sec. 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(1) For the purpose of this requirement, practicable alternatives include, but are not limited to:

(i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;

(ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could

reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.

(3) Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in Subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

(4) For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under this paragraph or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.

(5) To the extent that practicable alternatives have been identified and evaluated under a Coastal Zone Management program, a Sec. 208 program, or other planning process, such evaluation shall be considered by the permitting authority as part of the consideration of alternatives under the Guidelines. Where such evaluation is less complete than that contemplated under this subsection, it must be supplemented accordingly.

(b) No discharge of dredged or fill material shall be permitted if it:

(1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard;

(2) Violates any applicable toxic effluent standard or prohibition under section 307 of the Act;

(3) Jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or results in likelihood of the destruction or adverse modification of a habitat which is determined by the Secretary of Interior or Commerce, as appropriate, to be a critical habitat under the Endangered Species Act of 1973, as amended. If an exemption has been granted by the Endangered Species Committee, the terms of such exemption shall apply in lieu of this subparagraph;

(4) Violates any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972.

(c) Except as provided under Sec. 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States. Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests required by Subparts B and G, after consideration of Subparts C-F, with special emphasis on the persistence and permanence of the effects outlined in those subparts. Under these Guidelines, effects contributing to significant degradation considered individually or collectively, include:

(1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.

(2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

(3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or

(4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.

(d) Except as provided under Sec. 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. Subpart H identifies such possible steps.

Sec. 230.11 Factual determinations.

The permitting authority shall determine in writing the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment in light of Subparts C-F. Such factual determinations shall be used in Sec. 230.12 in making findings of compliance or non-compliance with the restrictions on discharge in Sec. 230.10. The evaluation and testing procedures described in Sec. 230.60 and Sec. 230.61 of Subpart G shall be used as necessary to make, and shall be described in, such determination. The determinations of effects of each proposed discharge shall include the following:

(a) Physical substrate determinations. Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, on the characteristics of the substrate at the proposed disposal site. Consideration shall be given to the similarity in particle size, shape, and degree of compaction of the material proposed for discharge and the material constituting the substrate at the disposal site, and any potential changes in substrate elevation and bottom contours, including changes outside of the disposal site which may occur as a result of erosion, slumpage, or other movement of the discharged material. The duration and physical extent of substrate changes shall also be considered. The possible loss of environmental values (Sec. 230.20) and actions to minimize impact (Subpart H) shall also be considered in making these determinations. Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current patterns, water circulation, wind and wave action, and other physical factors that may affect the movement of the discharged material.

(b) Water circulation, fluctuation, and salinity determinations. Determine the nature and degree of effect that the proposed discharge will have individually and cumulatively on water, current patterns, circulation including downstream flows, and normal water fluctuation. Consideration shall be given to water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, and eutrophication plus other appropriate characteristics. Consideration shall also be given to the potential diversion or obstruction of flow, alterations of bottom contours, or other significant changes in the

hydrologic regime. Additional consideration of the possible loss of environmental values (Sec. 230.23-.25) and actions to minimize impacts (Subpart H), shall be used in making these determinations. Potential significant effects on the current patterns, water circulation, normal water fluctuation and salinity shall be evaluated on the basis of the proposed method, volume, location, and rate of discharge.

(c) Suspended particulate/turbidity determinations. Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, in terms of potential changes in the kinds and concentrations of suspended particulate/turbidity in the vicinity of the disposal site. Consideration shall be given to the grain size of the material proposed for discharge, the shape and size of the plume of suspended particulates, the duration of the discharge and resulting plume and whether or not the potential changes will cause violations of applicable water quality standards. Consideration should also be given to the possible loss of environmental values (Sec. 230.21) and to actions for minimizing impacts (Subpart H). Consideration shall include the proposed method, volume, location, and rate of discharge, as well as the individual and combined effects of current patterns, water circulation and fluctuations, wind and wave action, and other physical factors on the movement of suspended particulates.

(d) Contaminant determinations. Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site, and the availability of contaminants.

(e) Aquatic ecosystem and organism determinations. Determine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms. Consideration shall be given to the effect at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients, currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities. Possible loss of environmental values (Sec. 230.31), and actions to minimize impacts (Subpart H) shall be examined. Tests as described in Sec. 230.61 (Evaluation and Testing), may be required to provide information on the effect of the discharge material on communities or populations of organisms expected to be exposed to it.

(f) Proposed disposal site determinations. (1) Each disposal site shall be specified through the application of these Guidelines. The mixing zone shall be confined to the smallest practicable zone within each specified disposal site that is consistent with the type of dispersion determined to be appropriate by the application of these Guidelines. In a few special cases under unique environmental conditions, where there is adequate justification to show that widespread dispersion by natural means will result in no significantly adverse environmental effects, the discharged material may be intended to be spread naturally in a very thin layer over a large area of the substrate rather than be contained within the disposal site.

(2) The permitting authority and the Regional Administrator shall consider the following factors in determining the acceptability of a proposed mixing zone:

- (i) Depth of water at the disposal site;
 - (ii) Current velocity, direction, and variability at the disposal site;
 - (iii) Degree of turbulence;
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(iv) Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site;

(v) Discharge vessel speed and direction, if appropriate;

(vi) Rate of discharge;

(vii) Ambient concentration of constituents of interest;

(viii) Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities;

(ix) Number of discharge actions per unit of time;

(x) Other factors of the disposal site that affect the rates and patterns of mixing.

(g) Determination of cumulative effects on the aquatic ecosystem. (1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

(2) Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. The permitting authority shall collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process. concerning the evaluation of individual permit applications, the issuance of a General permit, and monitoring and enforcement of existing permits.

(h) Determination of secondary effects on the aquatic ecosystem. (1) Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final section 404 action is taken by permitting authorities.

(2) Some examples of secondary effects on an aquatic ecosystem are fluctuating water levels in an impoundment and downstream associated with the operation of a dam, septic tank leaching and surface runoff from residential or commercial developments on fill, and leachate and runoff from a sanitary landfill located in waters of the U.S. Activities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands.

Sec. 230.12 Findings of compliance or non-compliance with the restrictions on discharge.

(a) On the basis of these Guidelines (Subparts C through G) the proposed disposal sites for the discharge of dredged or fill material must be:

(1) Specified as complying with the requirements of these Guidelines; or

(2) Specified as complying with the requirements of these Guidelines with the inclusion of appropriate and practicable discharge conditions (see Subpart H) to minimize pollution or adverse effects to the affected aquatic ecosystems; or

(3) Specified as failing to comply with the requirements of these Guidelines where:

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or

(ii) The proposed discharge will result in significant degradation of the aquatic ecosystem under Sec. 230.10(b) or (c); or

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or

(iv) There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.

(b) Findings under this section shall be set forth in writing by the permitting authority for each proposed discharge and made available to the permit applicant. These findings shall include the factual determinations required by Sec. 230.11, and a brief explanation of any adaptation of these Guidelines to the activity under consideration. In the case of a General permit, such findings shall be prepared at the time of issuance of that permit rather than for each subsequent discharge under the authority of that permit.

Subpart C -- Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

Note. -- The effects described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in Subpart B.

Sec. 230.20 Substrate.

(a) The substrate of the aquatic ecosystem underlies open waters of the United States and constitutes the surface of wetlands. It consists of organic and inorganic solid materials and includes water and other liquids or gases that fill the spaces between solid particles.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can result in varying degrees of change in the complex physical, chemical, and biological characteristics of the substrate. Discharges which alter substrate elevation or contours can result in changes in water circulation, depth, current pattern, water fluctuation and water temperature. Discharges may adversely affect bottom-dwelling organisms at the site by smothering immobile forms or forcing mobile forms to migrate. Benthic forms present prior to a discharge are unlikely to recolonize on the discharged material if it is very dissimilar from that of the discharge site. Erosion, slumping, or lateral displacement of surrounding bottom of such deposits can adversely affect areas of the substrate outside the perimeters of the disposal site by changing or destroying habitat. The bulk and composition of the discharged material and the location, method, and timing of discharges may all influence the degree of impact on the substrate.

Sec. 230.21 Suspended particulates/turbidity.

(a) Suspended particulates in the aquatic ecosystem consist of fine-grained mineral particles, usually smaller than silt, and organic particles. Suspended particulates may enter water bodies as a result of land runoff, flooding, vegetative and planktonic breakdown, resuspension of bottom sediments, and man's activities including dredging and filling. Particulates may remain suspended in the water column for variable periods of time as a result of such factors as agitation of the water mass, particulate specific gravity, particle shape, and physical and chemical properties of particle surfaces.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can result in greatly elevated levels of suspended particulates in the water column for varying lengths of time. These new levels may reduce light penetration and lower the rate of photosynthesis and the primary productivity of an aquatic area if they last long enough. Sight-dependent species may suffer reduced feeding ability leading to limited growth and lowered resistance to disease if high levels of suspended particulates persist. The biological and the chemical content of the suspended material may react with the dissolved oxygen in the water, which can result in oxygen depletion. Toxic metals and organics, pathogens, and viruses absorbed or adsorbed to fine-grained particulates in the material may become biologically available to organisms either in the water column or on the substrate. Significant increases in suspended particulate levels create turbid plumes which are highly visible and aesthetically displeasing. The extent and persistence of these adverse impacts caused by discharges depend upon the relative increase in suspended particulates above the amount occurring naturally, the duration of the higher levels, the current patterns, water level, and fluctuations present when such discharges occur, the volume, rate, and duration of the discharge, particulate deposition, and the seasonal timing of the discharge.

Sec. 230.22 Water.

(a) Water is the part of the aquatic ecosystem in which organic and inorganic constituents are dissolved and suspended. It constitutes part of the liquid phase and is contained by the substrate. Water forms part of a dynamic aquatic life-supporting system. Water clarity, nutrients and chemical content, physical and biological content, dissolved gas levels, pH, and temperature contribute to its life-sustaining capabilities.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can change the chemistry and the physical characteristics of the receiving water at a disposal site through the introduction of chemical constituents in suspended or dissolved form. Changes in the clarity, color, odor, and taste of water and the addition of contaminants can reduce or eliminate the suitability of water bodies for populations of aquatic organisms, and for human consumption, recreation, and aesthetics. The introduction of nutrients or organic material to the water column as a result of the discharge can lead to a high biochemical oxygen demand (BOD), which in turn can lead to reduced dissolved oxygen, thereby potentially affecting the survival of many aquatic organisms. Increases in nutrients can favor one group of organisms such as algae to the detriment of other more desirable types such as submerged aquatic vegetation, potentially causing adverse health effects, objectionable tastes and odors, and other problems.

Sec. 230.23 Current patterns and water circulation.

(a) Current patterns and water circulation are the physical movements of water in the aquatic ecosystem. Currents and circulation respond to natural forces as modified by basin shape and cover, physical and chemical characteristics of water strata and masses, and energy dissipating factors.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can modify current patterns and water circulation by obstructing flow, changing the direction or velocity of water flow, changing the direction or velocity of water flow and circulation, or otherwise changing the dimensions of a water body. As a result, adverse changes can occur in: location, structure, and dynamics of aquatic communities; shoreline and substrate erosion and deposition rates; the deposition of suspended particulates; the rate and extent of mixing of dissolved and suspended components of the water body; and water stratification.

Sec. 230.24 Normal water fluctuations.

(a) Normal water fluctuations in a natural aquatic system consist of daily, seasonal, and annual tidal and flood fluctuations in water level. Biological and physical components of such a system are either attuned to or characterized by these periodic water fluctuations.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can alter the normal water-level fluctuation pattern of an area, resulting in prolonged periods of inundation, exaggerated extremes of high and low water, or a static, nonfluctuating water level. Such water level modifications may change salinity patterns, alter erosion or sedimentation rates, aggravate water temperature extremes, and upset the nutrient and dissolved oxygen balance of the aquatic ecosystem. In addition, these modifications can alter or destroy communities and populations of aquatic animals and vegetation, induce populations of nuisance organisms, modify habitat, reduce food supplies, restrict movement of aquatic fauna, destroy spawning areas, and change adjacent, upstream, and downstream areas.

Sec. 230.25 Salinity gradients.

(a) Salinity gradients form where salt water from the ocean meets and mixes with fresh water from land.

(b) Possible loss of environmental characteristics and values: Obstructions which divert or restrict flow of either fresh or salt water may change existing salinity gradients. For example, partial blocking of the entrance to an estuary or river mouth that significantly restricts the movement of the salt water into and out of that area can effectively lower the volume of salt water available for mixing within that estuary. The downstream migration of the salinity gradient can occur, displacing the maximum sedimentation zone and requiring salinity-dependent aquatic biota to adjust to the new conditions, move to new locations if possible, or perish. In the freshwater zone, discharge operations in the upstream regions can have equally adverse impacts. A significant reduction in the volume of fresh water moving into an estuary below that which is considered normal can affect the location and type of mixing thereby changing the characteristic salinity patterns. The resulting changed circulation pattern can cause the upstream migration of the salinity gradient displacing the maximum sedimentation zone. This migration may affect those organisms that are adapted to freshwater environments. It may also affect municipal water supplies.

Note. -- Possible actions to minimize adverse impacts regarding site characteristics can be found in Subpart H.

Subpart D -- Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

Note. -- The impacts described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in Subpart B.

Sec. 230.30 Threatened and endangered species.

(a) An endangered species is a plant or animal in danger of extinction throughout all or a significant portion of its range. A threatened species is one in danger of becoming an endangered species in the foreseeable future throughout all or a significant portion of its range. Listings of threatened and endangered species as well as critical habitats are maintained by some individual States and by the U.S. Fish and Wildlife Service of the Department of the Interior (codified annually at 50 CFR Sec. 17.11). The Department of Commerce has authority over some threatened and endangered marine mammals, fish and reptiles.

(b) Possible loss of values: The major potential impacts on threatened or endangered species from the discharge of dredged or fill material include:

(1) Covering or otherwise directly killing species;

(2) The impairment or destruction of habitat to which these species are limited. Elements of the aquatic habitat which are particularly crucial to the continued survival of some threatened or endangered species include adequate good quality water, spawning and maturation areas, nesting areas, protective cover, adequate and reliable food supply, and resting areas for migratory species. Each of these elements can be adversely affected by changes in either the normal water conditions for clarity, chemical content, nutrient balance, dissolved oxygen, pH, temperature, salinity, current patterns, circulation and fluctuation, or the physical removal of habitat; and

(3) Facilitating incompatible activities.

(c) Where consultation with the Secretary of the Interior occurs under Section 7 of the Endangered Species Act, the conclusions of the Secretary concerning the impact(s) of the discharge on threatened and endangered species and their habitat shall be considered final.

Sec. 230.31 Fish, crustaceans, mollusks and other aquatic organisms in the food web.

(a) Aquatic organisms in the food web include, but are not limited to, finfish, crustaceans, mollusks, insects, annelids, planktonic organisms, and the plants and animals on which they feed and depend upon for their needs. All forms and life stages of an organism, throughout its geographic range, are included in this category.

(b) Possible loss of values: The discharge of dredged or fill material can variously affect populations of fish, crustaceans, mollusks and other food web organisms through the release of contaminants which adversely affect adults, juveniles, larvae, or eggs, or result in the establishment or proliferation of an undesirable competitive species of plant or animal at the expense of the desired resident species. Suspended particulates settling on attached or buried eggs can smother the eggs by limiting or sealing off their exposure to oxygenated water. Discharge of dredged and fill material may result in the debilitation or death of sedentary organisms by smothering, exposure to chemical contaminants in dissolved or suspended form, exposure to high levels of suspended particulates, reduction in food supply, or alteration of the substrate upon which they are dependent. Mollusks are particularly sensitive to the discharge of material during periods of reproduction and growth and development due primarily to their limited mobility. They can be rendered unfit for human consumption by tainting, by production and accumulation of toxins, or by ingestion and retention of pathogenic organisms, viruses, heavy metals or persistent synthetic organic chemicals. The discharge of dredged or fill material can redirect, delay, or stop the reproductive and feeding movements of some species of fish and crustacea, thus preventing their aggregation in accustomed places such as spawning or nursery grounds and

potentially leading to reduced populations. Reduction of detrital feeding species or other representatives of lower trophic levels can impair the flow of energy from primary consumers to higher trophic levels. The reduction or potential elimination of food chain organism populations decreases the overall productivity and nutrient export capability of the ecosystem.

Sec. 230.32 Other wildlife.

(a) Wildlife associated with aquatic ecosystems are resident and transient mammals, birds, reptiles, and amphibians.

(b) Possible loss of values: The discharge of dredged or fill material can result in the loss or change of breeding and nesting areas, escape cover, travel corridors, and preferred food sources for resident and transient wildlife species associated with the aquatic ecosystem. These adverse impacts upon wildlife habitat may result from changes in water levels, water flow and circulation, salinity, chemical content, and substrate characteristics and elevation. Increased water turbidity can adversely affect wildlife species which rely upon sight to feed, and disrupt the respiration and feeding of certain aquatic wildlife and food chain organisms. The availability of contaminants from the discharge of dredged or fill material may lead to the bioaccumulation of such contaminants in wildlife. Changes in such physical and chemical factors of the environment may favor the introduction of undesirable plant and animal species at the expense of resident species and communities. In some aquatic environments lowering plant and animal species diversity may disrupt the normal functions of the ecosystem and lead to reductions in overall biological productivity.

Note. -- Possible actions to minimize adverse impacts regarding characteristics of biological components of the aquatic ecosystem can be found in Subpart H.

Subpart E -- Potential Impacts on Special Aquatic Sites

Note. -- The impacts described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in Subpart B. The definition of special aquatic sites is found in Sec. 230.3(q-1).

Sec. 230.40 Sanctuaries and refuges.

(a) Sanctuaries and refuges consist of areas designated under State and Federal laws or local ordinances to be managed principally for the preservation and use of fish and wildlife resources.

(b) Possible loss of values: Sanctuaries and refuges may be affected by discharges of dredged or fill material which will:

(1) Disrupt the breeding, spawning, migratory movements or other critical life requirements of resident or transient fish and wildlife resources;

(2) Create unplanned, easy and incompatible human access to remote aquatic areas;

(3) Create the need for frequent maintenance activity;

(4) Result in the establishment of undesirable competitive species of plants and animals;

(5) Change the balance of water and land areas needed to provide cover, food, and other fish and wildlife habitat requirements in a way that modifies sanctuary or refuge management practices;

(6) Result in any of the other adverse impacts discussed in Subparts C and D as they relate to a particular sanctuary or refuge.

Sec. 230.41 Wetlands.

(a)(1) Wetlands consist of areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

(2) Where wetlands are adjacent to open water, they generally constitute the transition to upland. The margin between wetland and open water can best be established by specialists familiar with the local environment, particularly where emergent vegetation merges with submerged vegetation over a broad area in such places as the lateral margins of open water, headwaters, rainwater catch basins, and groundwater seeps. The landward margin of wetlands also can best be identified by specialists familiar with the local environment when vegetation from the two regions merges over a broad area.

(3) Wetland vegetation consists of plants that require saturated soils to survive (obligate wetland plants) as well as plants, including certain trees, that gain a competitive advantage over others because they can tolerate prolonged wet soil conditions and their competitors cannot. In addition to plant populations and communities, wetlands are delimited by hydrological and physical characteristics of the environment. These characteristics should be considered when information about them is needed to supplement information available about vegetation, or where wetland vegetation has been removed or is dormant.

(b) Possible loss of values: The discharge of dredged or fill material in wetlands is likely to damage or destroy habitat and adversely affect the biological productivity of wetlands ecosystems by smothering, by dewatering, by permanently flooding, or by altering substrate elevation or periodicity of water movement. The addition of dredged or fill material may destroy wetland vegetation or result in advancement of succession to dry land species. It may reduce or eliminate nutrient exchange by a reduction of the system's productivity, or by altering current patterns and velocities. Disruption or elimination of the wetland system can degrade water quality by obstructing circulation patterns that flush large expanses of wetland systems, by interfering with the filtration function of wetlands, or by changing the aquifer recharge capability of a wetland. Discharges can also change the wetland habitat value for fish and wildlife as discussed in Subpart D. When disruptions in flow and circulation patterns occur, apparently minor loss of wetland acreage may result in major losses through secondary impacts. Discharging fill material in wetlands as part of municipal, industrial or recreational development may modify the capacity of wetlands to retain and store floodwaters and to serve as a buffer zone shielding upland areas from wave actions, storm damage and erosion.

Sec. 230.42 Mud flats

(a) Mud flats are broad flat areas along the sea coast and in coastal rivers to the head of tidal influence and in inland lakes, ponds, and riverine systems. When mud flats are inundated, wind and wave action may resuspend bottom sediments. Coastal mud flats are exposed at extremely low tides and inundated at high tides with the water table at or near the surface of the substrate. The substrate of mud flats contains organic material and particles smaller in size than sand. They are either unvegetated or vegetated only by algal mats.

(b) Possible loss of values: The discharge of dredged or fill material can cause changes in water circulation patterns which may permanently flood or dewater the mud flat or disrupt periodic inundation, resulting in an increase in the rate of erosion or accretion. Such changes can deplete or

eliminate mud flat biota, foraging areas, and nursery areas. Changes in inundation patterns can affect the chemical and biological exchange and decomposition process occurring on the mud flat and change the deposition of suspended material affecting the productivity of the area. Changes may reduce the mud flat's capacity to dissipate storm surge runoff.

Sec. 230.43 Vegetated shallows.

(a) Vegetated shallows are permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as turtle grass and eelgrass in estuarine or marine systems as well as a number of freshwater species in rivers and lakes.

(b) Possible loss of values: The discharge of dredged or fill material can smother vegetation and benthic organisms. It may also create unsuitable conditions for their continued vigor by: (1) changing water circulation patterns; (2) releasing nutrients that increase undesirable algal populations; (3) releasing chemicals that adversely affect plants and animals; (4) increasing turbidity levels, thereby reducing light penetration and hence photosynthesis; and (5) changing the capacity of a vegetated shallow to stabilize bottom materials and decrease channel shoaling. The discharge of dredged or fill material may reduce the value of vegetated shallows as nesting, spawning, nursery, cover, and forage areas, as well as their value in protecting shorelines from erosion and wave actions. It may also encourage the growth of nuisance vegetation.

Sec. 230.44 Coral reefs.

(a) Coral reefs consist of the skeletal deposit, usually of calcareous or siliceous materials, produced by the vital activities of anthozoan polyps or other invertebrate organisms present in growing portions of the reef.

(b) Possible loss of values: The discharge of dredged or fill material can adversely affect colonies of reef building organisms by burying them, by releasing contaminants such as hydrocarbons into the water column, by reducing light penetration through the water, and by increasing the level of suspended particulates. Coral organisms are extremely sensitive to even slight reductions in light penetration or increases in suspended particulates. These adverse effects will cause a loss of productive colonies which in turn provide habitat for many species of highly specialized aquatic organisms.

Sec. 230.45 Riffle and pool complexes.

(a) Steep gradient sections of streams are sometimes characterized by riffle and pool complexes. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. Pools are characterized by a slower stream velocity, a steaming flow, a smooth surface, and a finer substrate. Riffle and pool complexes are particularly valuable habitat for fish and wildlife.

(b) Possible loss of values: Discharge of dredged or fill material can eliminate riffle and pool areas by displacement, hydrologic modification, or sedimentation. Activities which affect riffle and pool areas and especially riffle/pool ratios, may reduce the aeration and filtration capabilities at the discharge site and downstream, may reduce stream habitat diversity, and may retard repopulation of the disposal site and downstream waters through sedimentation and the creation of unsuitable habitat. The discharge of dredged or fill material which alters stream hydrology may cause scouring or sedimentation of riffles and pools. Sedimentation induced through hydrological modification or as a direct result of the deposition of unconsolidated dredged or fill material may clog riffle and pool areas, destroy habitats,

and create anaerobic conditions. Eliminating pools and meanders by the discharge of dredged or fill material can reduce water holding capacity of streams and cause rapid runoff from a watershed. Rapid runoff can deliver large quantities of flood water in a short time to downstream areas resulting in the destruction of natural habitat, high property loss, and the need for further hydraulic modification.

Note. -- Possible actions to minimize adverse impacts on site or material characteristics can be found in Subpart H.

Subpart F -- Potential Effects on Human Use Characteristics

Note. -- The effects described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in Subpart B.

Sec. 230.50 Municipal and private water supplies.

(a) Municipal and private water supplies consist of surface water or ground water which is directed to the intake of a municipal or private water supply system.

(b) Possible loss of values: Discharges can affect the quality of water supplies with respect to color, taste, odor, chemical content and suspended particulate concentration, in such a way as to reduce the fitness of the water for consumption. Water can be rendered unpalatable or unhealthy by the addition of suspended particulates, viruses and pathogenic organisms, and dissolved materials. The expense of removing such substances before the water is delivered for consumption can be high. Discharges may also affect the quantity of water available for municipal and private water supplies. In addition, certain commonly used water treatment chemicals have the potential for combining with some suspended or dissolved substances from dredged or fill material to form other products that can have a toxic effect on consumers.

Sec. 230.51 Recreational and commercial fisheries.

(a) Recreational and commercial fisheries consist of harvestable fish, crustaceans, shellfish, and other aquatic organisms used by man.

(b) Possible loss of values: The discharge of dredged or fill materials can affect the suitability of recreational and commercial fishing grounds as habitat for populations of consumable aquatic organisms. Discharges can result in the chemical contamination of recreational or commercial fisheries. They may also interfere with the reproductive success of recreational and commercially important aquatic species through disruption of migration and spawning areas. The introduction of pollutants at critical times in their life cycle may directly reduce populations of commercially important aquatic organisms or indirectly reduce them by reducing organisms upon which they depend for food. Any of these impacts can be of short duration or prolonged, depending upon the physical and chemical impacts of the discharge and the biological availability of contaminants to aquatic organisms.

Sec. 230.52 Water-related recreation.

(a) Water-related recreation encompasses activities undertaken for amusement and relaxation. Activities encompass two broad categories of use: consumptive, e.g., harvesting resources by hunting and fishing; and non-consumptive, e.g. canoeing and sight-seeing.

(b) Possible loss of values: One of the more important direct impacts of dredged or fill disposal is to impair or destroy the resources which support recreation activities. The disposal of dredged or fill

material may adversely modify or destroy water use for recreation by changing turbidity, suspended particulates, temperature, dissolved oxygen, dissolved materials, toxic materials, pathogenic organisms, quality of habitat, and the aesthetic qualities of sight, taste, odor, and color.

Sec. 230.53 Aesthetics.

(a) Aesthetics associated with the aquatic ecosystem consist of the perception of beauty by one or a combination of the senses of sight, hearing, touch, and smell. Aesthetics of aquatic ecosystems apply to the quality of life enjoyed by the general public and property owners.

(b) Possible loss of values: The discharge of dredged or fill material can mar the beauty of natural aquatic ecosystems by degrading water quality, creating distracting disposal sites, inducing inappropriate development, encouraging unplanned and incompatible human access, and by destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area. The discharge of dredged or fill material can adversely affect the particular features, traits, or characteristics of an aquatic area which make it valuable to property owners. Activities which degrade water quality, disrupt natural substrate and vegetational characteristics, deny access to or visibility of the resource, or result in changes in odor, air quality, or noise levels may reduce the value of an aquatic area to private property owners.

Sec. 230.54 Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

(a) These preserves consist of areas designated under Federal and State laws or local ordinances to be managed for their aesthetic, educational, historical, recreational, or scientific value.

(b) Possible loss of values: The discharge of dredged or fill material into such areas may modify the aesthetic, educational, historical, recreational and/or scientific qualities thereby reducing or eliminating the uses for which such sites are set aside and managed.

Note. -- Possible actions to minimize adverse impacts regarding site or material characteristics can be found in Subpart H.

Subpart G -- Evaluation and Testing

Sec. 230.60 General evaluation of dredged or fill material.

The purpose of these evaluation procedures and the chemical and biological testing sequence outlined in Sec. 230.61 is to provide information to reach the determinations required by Sec. 230.11. Where the results of prior evaluations, chemical and biological tests, scientific research, and experience can provide information helpful in making a determination, these should be used. Such prior results may make new testing unnecessary. The information used shall be documented. Where the same information applies to more than one determination, it may be documented once and referenced in later determinations.

(a) If the evaluation under paragraph (b) indicates the dredged or fill material is not a carrier of contaminants, then the required determinations pertaining to the presence and effects of contaminants can be made without testing. Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. Dredged material so composed is generally found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels.

However, when such material is discolored or contains other indications that contaminants may be present, further inquiry should be made.

(b) The extraction site shall be examined in order to assess whether it is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants. Factors to be considered include but are not limited to:

(1) Potential routes of contaminants or contaminated sediments to the extraction site, based on hydrographic or other maps, aerial photography, or other materials that show watercourses, surface relief, proximity to tidal movement, private and public roads, location of buildings, municipal and industrial areas, and agricultural or forest lands.

(2) Pertinent results from tests previously carried out on the material at the extraction site, or carried out on similar material for other permitted projects in the vicinity. Materials shall be considered similar if the sources of contamination, the physical configuration of the sites and the sediment composition of the materials are comparable, in light of water circulation and stratification, sediment accumulation and general sediment characteristics. Tests from other sites may be relied on only if no changes have occurred at the extraction sites to render the results irrelevant.

(3) Any potential for significant introduction of persistent pesticides from land runoff or percolation;

(4) Any records of spills or disposal of petroleum products or substances designated as hazardous under section 311 of the Clean Water Act (See 40 CFR 116);

(5) Information in Federal, State and local records indicating significant introduction of pollutants from industries, municipalities, or other sources, including types and amounts of waste materials discharged along the potential routes of contaminants to the extraction site; and

(6) Any possibility of the presence of substantial natural deposits of minerals or other substances which could be released to the aquatic environment in harmful quantities by man-induced discharge activities.

(c) To reach the determinations in Sec. 230.11 involving potential effects of the discharge on the characteristics of the disposal site, the narrative guidance in Subparts C-F shall be used along with the general evaluation procedure in Sec. 230.60 and, if necessary, the chemical and biological testing sequence in Sec. 230.61. Where the discharge site is adjacent to the extraction site and subject to the same sources of contaminants, and materials at the two sites are substantially similar, the fact that the material to be discharged may be a carrier of contaminants is not likely to result in degradation of the disposal site. In such circumstances, when dissolved material and suspended particulates can be controlled to prevent carrying pollutants to less contaminated areas, testing will not be required.

(d) Even if the Sec. 230.60(b) evaluation (previous tests, the presence of polluting industries and information about their discharge or runoff into waters of the U.S., bioinventories, etc.) leads to the conclusion that there is a high probability that the material proposed for discharge is a carrier of contaminants, testing may not be necessary if constraints are available to reduce contamination to acceptable levels within the disposal site and to prevent contaminants from being transported beyond the boundaries of the disposal site, if such constraints are acceptable to the permitting authority and the Regional Administrator, and if the potential discharger is willing and able to implement such constraints. However, even if tests are not performed, the permitting authority must still determine the probable impact of the operation on the receiving aquatic ecosystem. Any decision not to test must be explained in the determinations made under Sec. 230.11.

Sec. 230.61 Chemical, biological, and physical evaluation and testing.

Note. -- The Agency is today proposing revised testing guidelines. The evaluation and testing procedures in this section are based on the 1975 Sec. 404(b)(1) interim final Guidelines and shall remain in effect until the revised testing guidelines are published as final regulations.

(a) No single test or approach can be applied in all cases to evaluate the effects of proposed discharges of dredged or fill materials. This section provides some guidance in determining which test and/or evaluation procedures are appropriate in a given case. Interim guidance to applicants concerning the applicability of specific approaches or procedures will be furnished by the permitting authority.

(b) Chemical-biological interactive effects. The principal concerns of discharge of dredged or fill material that contain contaminants are the potential effects on the water column and on communities of aquatic organisms.

(1) Evaluation of chemical-biological interactive effects. Dredged or fill material may be excluded from the evaluation procedures specified in paragraphs (b)(2) and (3) of this section if it is determined, on the basis of the evaluation in Sec. 230.60, that the likelihood of contamination by contaminants is acceptably low, unless the permitting authority, after evaluating and considering any comments received from the Regional Administrator, determines that these procedures are necessary. The Regional Administrator may require, on a case-by-case basis, testing approaches and procedures by stating what additional information is needed through further analyses and how the results of the analyses will be of value in evaluating potential environmental effects.

If the General Evaluation indicates the presence of a sufficiently large number of chemicals to render impractical the identification of all contaminants by chemical testing, information may be obtained from bioassays in lieu of chemical tests.

(2) Water column effects. (i) Sediments normally contain constituents that exist in various chemical forms and in various concentrations in several locations within the sediment. An elutriate test may be used to predict the effect on water quality due to release of contaminants from the sediment to the water column. However, in the case of fill material originating on land which may be a carrier of contaminants, a water leachate test is appropriate.

(ii) Major constituents to be analyzed in the elutriate are those deemed critical by the permitting authority, after evaluating and considering any comments received from the Regional Administrator, and considering results of the evaluation in Sec. 230.60. Elutriate concentrations should be compared to concentrations of the same constituents in water from the disposal site. Results should be evaluated in light of the volume and rate of the intended discharge, the type of discharge, the hydrodynamic regime at the disposal site, and other information relevant to the impact on water quality. The permitting authority should consider the mixing zone in evaluating water column effects. The permitting authority may specify bioassays when such procedures will be of value.

(3) Effects on benthos. The permitting authority may use an appropriate benthic bioassay (including bioaccumulation tests) when such procedures will be of value in assessing ecological effects and in establishing discharge conditions.

(c) Procedure for comparison of sites.

(1) When an inventory of the total concentration of contaminants would be of value in comparing sediment at the dredging site with sediment at the disposal site, the permitting authority may require a sediment chemical analysis. Markedly different concentrations of contaminants between the excavation and disposal sites may aid in making an environmental assessment of the proposed disposal operation. Such differences should be interpreted in terms of the potential for harm as supported by any pertinent scientific literature.

(2) When an analysis of biological community structure will be of value to assess the potential for adverse environmental impact at the proposed disposal site, a comparison of the biological characteristics between the excavation and disposal sites may be required by the permitting authority. Biological indicator species may be useful in evaluating the existing degree of stress at both sites. Sensitive species representing community components colonizing various substrate types within the sites should be identified as possible bioassay organisms if tests for toxicity are required. Community structure studies should be performed only when they will be of value in determining discharge conditions. This is particularly applicable to large quantities of dredged material known to contain adverse quantities of toxic materials. Community studies should include benthic organisms such as microbiota and harvestable shellfish and finfish. Abundance, diversity, and distribution should be documented and correlated with substrate type and other appropriate physical and chemical environmental characteristics.

(d) Physical tests and evaluation. The effect of a discharge of dredged or fill material on physical substrate characteristics at the disposal site, as well as on the water circulation, fluctuation, salinity, and suspended particulates content there, is important in making factual determinations in Sec. 230.11. Where information on such effects is not otherwise available to make these factual determinations, the permitting authority shall require appropriate physical tests and evaluations as are justified and deemed necessary. Such tests may include sieve tests, settleability tests, compaction tests, mixing zone and suspended particulate plume determinations, and site assessments of water flow, circulation, and salinity characteristics.

Subpart H -- Actions To Minimize Adverse Effects

Note. -- There are many actions which can be undertaken in response to Sec. 203.10(d) to minimize the adverse effects of discharges of dredged or fill material. Some of these, grouped by type of activity, are listed in this subpart.

Sec. 230.70 Actions concerning the location of the discharge.

The effects of the discharge can be minimized by the choice of the disposal site. Some of the ways to accomplish this are by:

- (a) Locating and confining the discharge to minimize smothering of organisms;
 - (b) Designing the discharge to avoid a disruption of periodic water inundation patterns;
 - (c) Selecting a disposal site that has been used previously for dredged material discharge;
 - (d) Selecting a disposal site at which the substrate is composed of material similar to that being discharged, such as discharging sand on sand or mud on mud;
 - (e) Selecting the disposal site, the discharge point, and the method of discharge to minimize the extent of any plume;
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(f) Designing the discharge of dredged or fill material to minimize or prevent the creation of standing bodies of water in areas of normally fluctuating water levels, and minimize or prevent the drainage of areas subject to such fluctuations.

Sec. 230.71 Actions concerning the material to be discharged.

The effects of a discharge can be minimized by treatment of, or limitations on the material itself, such as:

- (a) Disposal of dredged material in such a manner that physiochemical conditions are maintained and the potency and availability of pollutants are reduced.
- (b) Limiting the solid, liquid, and gaseous components of material to be discharged at a particular site;
- (c) Adding treatment substances to the discharge material;
- (d) Utilizing chemical flocculants to enhance the deposition of suspended particulates in diked disposal areas.

Sec. 230.72 Actions controlling the material after discharge.

The effects of the dredged or fill material after discharge may be controlled by:

- (a) Selecting discharge methods and disposal sites where the potential for erosion, slumping or leaching of materials into the surrounding aquatic ecosystem will be reduced. These sites or methods include, but are not limited to:
 - (1) Using containment levees, sediment basins, and cover crops to reduce erosion;
 - (2) Using lined containment areas to reduce leaching where leaching of chemical constituents from the discharged material is expected to be a problem;
- (b) Capping in-place contaminated material with clean material or selectively discharging the most contaminated material first to be capped with the remaining material;
- (c) Maintaining and containing discharged material properly to prevent point and nonpoint sources of pollution;
- (d) Timing the discharge to minimize impact, for instance during periods of unusual high water flows, wind, wave, and tidal actions.

Sec. 230.73 Actions affecting the method of dispersion.

The effects of a discharge can be minimized by the manner in which it is dispersed, such as:

- (a) Where environmentally desirable, distributing the dredged material widely in a thin layer at the disposal site to maintain natural substrate contours and elevation;
 - (b) Orienting a dredged or fill material mound to minimize undesirable obstruction to the water current or circulation pattern, and utilizing natural bottom contours to minimize the size of the mound;
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- (c) Using silt screens or other appropriate methods to confine suspended particulate/turbidity to a small area where settling or removal can occur;
- (d) Making use of currents and circulation patterns to mix, disperse and dilute the discharge;
- (e) Minimizing water column turbidity by using a submerged diffuser system. A similar effect can be accomplished by submerging pipeline discharges or otherwise releasing materials near the bottom;
- (f) Selecting sites or managing discharges to confine and minimize the release of suspended particulates to give decreased turbidity levels and to maintain light penetration for organisms;
- (g) Setting limitations on the amount of material to be discharged per unit of time or volume of receiving water.

Sec. 230.74 Actions related to technology.

Discharge technology should be adapted to the needs of each site. In determining whether the discharge operation sufficiently minimizes adverse environmental impacts, the applicant should consider:

- (a) Using appropriate equipment or machinery, including protective devices, and the use of such equipment or machinery in activities related to the discharge of dredged or fill material;
- (b) Employing appropriate maintenance and operation on equipment or machinery, including adequate training, staffing, and working procedures;
- (c) Using machinery and techniques that are especially designed to reduce damage to wetlands. This may include machines equipped with devices that scatter rather than mound excavated materials, machines with specially designed wheels or tracks, and the use of mats under heavy machines to reduce wetland surface compaction and rutting;
- (d) Designing access roads and channel spanning structures using culverts, open channels, and diversions that will pass both low and high water flows, accommodate fluctuating water levels, and maintain circulation and faunal movement;
- (e) Employing appropriate machinery and methods of transport of the material for discharge.

Sec. 230.75 Actions affecting plant and animal populations.

Minimization of adverse effects on populations of plants and animals can be achieved by:

- (a) Avoiding changes in water current and circulation patterns which would interfere with the movement of animals;
 - (b) Selecting sites or managing discharges to prevent or avoid creating habitat conducive to the development of undesirable predators or species which have a competitive edge ecologically over indigenous plants or animals;
 - (c) Avoiding sites having unique habitat or other value, including habitat of threatened or endangered species;
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(d) Using planning and construction practices to institute habitat development and restoration to produce a new or modified environmental state of higher ecological value by displacement of some or all of the existing environmental characteristics. Habitat development and restoration techniques can be used to minimize adverse impacts and to compensate for destroyed habitat. Use techniques that have been demonstrated to be effective in circumstances similar to those under consideration wherever possible. Where proposed development and restoration techniques have not yet advanced to the pilot demonstration stage, initiate their use on a small scale to allow corrective action if unanticipated adverse impacts occur.

(e) Timing discharge to avoid spawning or migration seasons and other biologically critical time periods;

(f) Avoiding the destruction of remnant natural sites within areas already affected by development.

Sec. 230.76 Actions affecting human use.

Minimization of adverse effects on human use potential may be achieved by:

(a) Selecting discharge sites and following discharge procedures to prevent or minimize any potential damage to the aesthetically pleasing features of the aquatic site (e.g. viewscales), particularly with respect to water quality;

(b) Selecting disposal sites which are not valuable as natural aquatic areas;

(c) Timing the discharge to avoid the seasons or periods when human recreational activity associated with the aquatic site is most important;

(d) Following discharge procedures which avoid or minimize the disturbance of aesthetic features of an aquatic site or ecosystem.

(e) Selecting sites that will not be detrimental or increase incompatible human activity, or require the need for frequent dredge or fill maintenance activity in remote fish and wildlife areas;

(f) Locating the disposal site outside of the vicinity of a public water supply intake.

Sec. 230.77 Other actions.

(a) In the case of fills, controlling runoff and other discharges from activities to be conducted on the fill;

(b) In the case of dams, designing water releases to accommodate the needs of fish and wildlife.

(c) In dredging projects funded by Federal agencies other than the Corps of Engineers, maintain desired water quality of the return discharge through agreement with the Federal funding authority on scientifically defensible pollutant concentration levels in addition to any applicable water quality standards.

(d) When a significant ecological change in the aquatic environment is proposed by the discharge of dredged or fill material, the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.

Subpart I -- Planning To Shorten Permit Processing Time

Sec. 230.80 Advanced identification of disposal areas.

(a) Consistent with these Guidelines, EPA and the permitting authority, on their own initiative or at the request of any other party and after consultation with any affected State that is not the permitting authority, may identify sites which will be considered as:

(1) Possible future disposal sites, including existing disposal sites and non-sensitive areas; or

(2) Areas generally unsuitable for disposal site specification;

(b) The identification of any area as a possible future disposal site should not be deemed to constitute a permit for the discharge of dredged or fill material within such area or a specification of a disposal site. The identification of areas that generally will not be available for disposal site specification should not be deemed as prohibiting applications for permits to discharge dredged or fill material in such areas. Either type of identification constitutes information to facilitate individual or General permit application and processing.

(c) An appropriate public notice of the proposed identification of such areas shall be issued;

(d) To provide the basis for advanced identification of disposal areas, and areas unsuitable for disposal, EPA and the permitting authority shall consider the likelihood that use of the area in question for dredged or fill material disposal will comply with these Guidelines. To facilitate this analysis, EPA and the permitting authority should review available water resources management data including data available from the public, other Federal and State agencies, and information from approved Coastal Zone Management programs and River Basin Plans.

(e) The permitting authority should maintain a public record of the identified areas and a written statement of the basis for identification.

[FR Doc. 80-40001 Filed 12-23-80; 8:45 am]

BILLING CODE 6560-01-M
